# THE BUILDER

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Dennis, Henry
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Leeds Fireclay Co. Ltd.
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Nelson, C. & Co. Ltd.
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Kerner-Greenwood & Co. (Fudlo).

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Gibson, A. L. & Co.
Haywards, Ltd.
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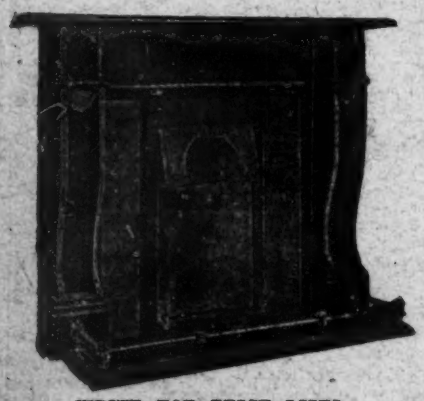

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# THE BUILDER

*A RECORD OF ARCHITECTURE AND CONSTRUCTION.*

VOL. CX.—No. 3815. MARCH 17, 1916.

## OFFICIAL ARCHITECTURE IN INDIA.

THE architectural work undertaken by the Government of India is both important and interesting—firstly, because the Government of India is a benevolent despotism which directly undertakes and controls many branches of activity left in this country to self-governing communities; secondly, because the needs of a population five times as numerous as that of the United Kingdom have to be met; and, lastly, because the nature of the problem makes its adequate solution exceedingly difficult. We have before us a copy of the annual Report on Architectural Works in India for the year 1914-15, compiled by the Consulting Architect to the Government of India, and its study adds further point to criticisms which we made in reviewing last year's Report* —comments which were subsequently discussed in a letter received from Mr. Begg which we gave in our columns.†

Our argument was that the architects employed by the Government of India were too few in number to be able to deal in an adequate manner with the enormous amount of work which passed through their hands, and we urged that in the interests of the public service and of architecture the conditions should be altered. Mr. Begg stated in his letter that "no Government architect in India is or can be the architect of any building in the full and individual sense that applies in private practice at home. His work is necessarily more or less of the nature of a collaboration with the administrative and executive machinery of the Public Works Department as that exists from time to time. . . . It is therefore an unsound basis on which to found any criticism of the building work of the Department to compare the amount of work with which one of our architects may be associated to the amount with which the average architect in private practice may be associated." The writer went on to say that the system was in a state of transition, and that the *Builder* would "best serve the cause of architecture in India by the attitude of encouragement displayed by certain of its contemporaries towards the work of the Public Works Department and, for the rest, by a suspension of judgment."

We feel, on the other hand, that if, as Mr. Begg says, the system is in a state of transition, presumably from a time in which work was wholly directed, controlled, and designed by engineers to one in which work will be wholly directed, controlled, and designed by architects, we serve a useful purpose if we are able to show reason why the transition period should be abbreviated, and, admitting the argument that the work of architects in the Public Works Department cannot be compared with that of the private practitioner, as it is more or less in the nature of a collaboration, the point still remains that the work which has to be done by the twenty-seven architects whose names are given in this Report is altogether too much to be adequately dealt with by them, even if they are relieved of all supervision and other administrative duties, which, we gather, is not entirely the case. The year's record of the work of the Consulting Architect to the Government of India forms a list of sixty-four buildings, including a Woman's Medical College at Delhi, five post-offices, twenty churches, three railway-stations, seven science or college buildings, and a number of other works. The work dealt with by the Consulting Architect to the Government of Bombay includes sixty-four buildings, many of great importance; that of the Government of Bengal include fifty-two buildings; Madras, thirty-five buildings; Burma, fifteen buildings of different sizes; the United Provinces of Agra and Oudh, twenty-three buildings; Bihar and Orissa, many important buildings, besides work carried out in the Central Provinces.

We are aware that these lists contain preliminary sketches for works which will be more fully considered subsequently and works which are being completed and really belong to former years; but, even assuming this and admitting that the architects employed have the assistance of engineers and draughtsmen and clerks of the works, it seems clear that the architects whose names are given in the Report are too few in number to cope with the mass of work described, and that this fact *is bound to militate against the quality of the work done, and that it would be in the interests of the Government of India to employ further architectural assistance.*

We illustrate four of the more important buildings completed in the year—two post-office buildings, the Prince of Wales Museum, Bombay, and the Government House at Puri. These are designed by four different architects, and give a good idea of the quality of work produced. Under the conditions which obtain the Government of India is to be congratulated because the standard of design is as good as it is, but we are sure that better results would be obtained from the recognition of the fact that good architecture is the result of thought and study, and cannot be produced unless the designer has ample time and opportunity for thought. The want of adequate consideration may be evidenced in defective planning, which means economical loss to the employer, and in poor architectural design, which entails a loss of beauty to the world.

In all these designs we see a curious note of hesitancy—they are neither Eastern nor Western in type—and in three out of the four definite and strongly-marked cornices and horizontal lines are, for some reason, entirely omitted. There is a more decided note in design in the examples of modern work carried out by the Indian master builders, which we give by way of comparison, and which with all their faults possess an interest which does not attach to the work of the Public Works Department. Mr. Havell* says, "A department which exists *pro bono publico* should not be worked as it has been to the detriment of Indian craftsmanship; neither is it policy to allow the vested interests of a great State monopoly to prejudice Indians against the British Raj. Certainly there are useful things which the Indian builders might learn from co-operation with the Western engineer and architect. But why is it that in over fifty years, during which all the most important building operations in British India and in many of the Native States have been a close Government monopoly, not a single Indian master builder has been trained to understand these useful modern things? History proves that the Indian craftsman has always had the capacity for learning and even for teaching his teachers. But there is now no co-operation between the architect and the craftsman, and the education in architecture afforded to Indian students at Anglo-Indian Engineering Colleges is a relic of Victorian pedagogics of seventy years ago. . . . The curriculum is such that, if by any chance a young Indian master builder should enter one of these colleges, he would end by ceasing to be a first-rate craftsman architect and become a fourth-rate engineer." We believe Mr. Havell is justified when he pleads for the co-operation of the English architect and the Indian craftsman, but that he is wrong in considering the working basis to be the native style. Equally we feel that the work of the Public Works Department is somewhat nondescript and indeterminate. The best medium would seem to be a vigorous and free rendering of the types of Renaissance employed with such success in the Spanish colonies of South America, Mexico, and California, varieties of which would be suitable for the wants of the climate of India, while they are European enough to be sympathetically expressed by our architects and elastic enough to lend themselves to the

* "Architectural Work in India," February 5, 1915.
† "Government Architecture, India," March 26, 1915

* "Indian Architecture." E. B. Havell.

incorporation of much of the decoration and possibly the constructive features which are indigenous to the Indian peninsula. In the projected buildings of New Delhi, as far as we can judge from the sketch designs we have seen, there is the seed of such forms of design, which we trust will burgeon and grow, forming the foundation of a style which may be a fitting chapter in the development of Indian architecture, in the same way that Moghul forms were of the civilisation introduced by the Mohammedan rulers of past centuries.

If the point of view we have advanced is reasonable, it is an additional reason why the Government of India should ungrudgingly recognise the services which have been performed for them by the architects they have employed within recent years, and give them conditions which will enable them to think out the great problems, æsthetic as well as practical, which await solution. They have moved in the right direction in recognising that architects rather than engineers should design buildings, and they will be advancing the great work of government in India by making an æsthetic improvement possible. The benefits of British rule in India need not be confined to the administration of justice and the promotion of material prosperity, but will be of more value if they make an appeal to the idealistic and æsthetic elements of Indian character.

# NOTES.

**The R.I.B.A. and its Elections.**

WE are glad to state that at the special general meeting held on Monday it was unanimously decided that the by-laws should be suspended to allow the present Council to remain in office for a further year, thus obviating the necessity for the expense and labour entailed by an election at a time when a large number of members are away. Nothing of moment can be done until the war is over, and no election result would be really representative of the views of the whole of the members, apart from which much paper—white, blue, yellow, pink, and green—will be saved at a time when there is a shortage of paper and dyes! More than this, the staff of the R.I.B.A. will be relieved of unnecessary work when their activities are fully taken up with extra work incidental to the war and the special conditions it has brought about among architects. We trust in another year's time there will be nothing to prevent the holding of an election under normal circumstances, and one which will be more interesting than usual, for many live issues will come into being with the termination of hostilities, and it is to be hoped that commercial prosperity will follow in its train.

**Westminster Cathedral.**

THE mosaic tympanum over the main entrance of Westminster Cathedral has been completed, and the effect of Mr. Anning Bell's work can be seen. The central group represents God the Son, attended by the Virgin Mother and St. Joseph. Christ is seated on a throne, one hand raised in blessing the world, and is crowned by the cruciform nimbus. On the extreme left of the panel St. Peter is shown as the first Bishop of the Christian Church. On the extreme right of the panel is St. Edward the Confessor. The treatment of the figures is reticent and refined, and the colouring very pleasing when considered independently of its surroundings; but when these are taken into consideration we feel that the whole effect is too light in tone, which will be increasingly apparent as the surrounding stone and brickwork become darker. We question whether the external use of mosaic will ever be wholly satisfactory in our climate, and, although the tympanum was intended for mosaic decoration, we believe a far better result would have been possible had stone bas-reliefs in low relief been employed. This need not detract from our appreciation of a piece of work which is in itself fine and well considered; but the decoration of Westminster Cathedral will enable us to form an opinion as to whether marble or mosaic is suitable for the decorative schemes of any of our buildings.

**Mr. Pennell's Criticism.**

ONE of the most difficult questions to decide is whether our views on art and architecture are almost wholly the result of education and habit or whether they are founded on instinctive and racial feelings which it is unwise to attempt to override. The gist of Mr. Pennell's criticism as shown in his letter to us—and, we may add, in the notes in the catalogue of "Germany at Work"—indicates a dislike of Classicism as expressed in modern architecture and a suspicion of concealed construction. Mr. Pennell sees the soul of structure in things mediæval, in modern engineering, and in the work of Germany, and elsewhere we are inclined to believe he suspects an inclination to indulge in unmeaning shams. He probably expresses in his views on architecture what many of the public feel but give no utterance to. It may be that the modern architect is dangerously "off the rails" in his estimation of architectural values, and that the public want of interest in the subject is due to an instinctive dislike of an artificial standard rather than a normal indifference to a subject they do not understand. The question is one of very great interest, and we should like to hear more of Mr. Pennell's views than can be covered in the notes in a catalogue, however tersely and vigorously expressed. History shows how difficult it is for any generation to separate the prophet from the fanatic, and time is almost always necessary before we can judge fairly as to the rival claims of the discoverers of "truth."

**The Land Taxes and Economy.**

THE *Times* on March 2 called attention to the extravagance involved in war-time by continuing the Land Valuation Department, which it asserted would cost £361,000 in the coming year to secure the collection of revenue which would not amount to £50,000. The actual expenditure of the Department is not the only waste involved by this system of taxation, as it still imposes expense on those who come under its long-drawn-out valuations, and it still is detrimental in checking building and other industries. The scheme of valuation was always chimerical, and if it had ever had any bottom in it the war has certainly knocked that bottom out. What possible use can it be to ascertain the value of property as on April 30, 1909? It would serve as useful a purpose to ascertain its value before the Flood. The war has put an end to "increment value" for many years to come, and present conditions render it a manifest injustice to tax undeveloped land. Undeveloped soldiers are all that the nation are now considering. We cannot help feeling that the author of this system of taxation, who is now doing such splendid service to the country, might be relieved himself if one of his own bombs were to shatter this whole scheme of land valuation; but, however this may be, when the Government are looking for economies to be effected and men to be set free they cannot do better than to evacuate the Land Valuation offices and order the staff "back to the land."

**Churches of St. Nicholas and St. Peter, Liverpool.**

AN Order in Council has just been made to constitute the old parochial Chapel of St Nicholas, which stands by the riverside, near to St. George's landing-stage, as the parish church of Liverpool instead of St. Peter's, formerly the cathedral, as the Chapel of the Virgin in the new cathedral is now opened and dedicated for worship. The Order provides further for the pulling down of St. Peter's and vesting the site and churchyard in the Ecclesiastical Commissioners. The church was built in 1704, and is a good specimen of an ordinary tower church of that day, having an interior with good woodwork and fittings of oak, and a tower surmounted with an octagonal turret and pinnacles. St. Nicholas's, which at one time had four chantries, was erected in or about 1350, and for more than 350 years was the only church in the original chapelry of Liverpool in Walton parish. It was rebuilt (the tower and spire excepted) in 1774 after the Batty Langley Gothic style. The tower fell upon the congregation in 1810, and was replaced nine years afterwards with a notable one of modern Perpendicular Gothic, crowned with an open-traceried spire, designed by Harrison, of Chester, the composition being similar to that at St. Nicholas's, Newcastle-on-Tyne.

**Forthcoming Picture Exhibitions.**

AN exhibition has been arranged to take place in London of the Italian Association of Etchers and Engravers (Associazione Italiana Aquafortisti e Incisori). The Royal Society of British Artists has offered its rooms for the exhibition. One half of the net entries from sales will be devoted to the benefit of the Italian Red Cross. The exhibition will consist exclusively of original works in engraving, etchings, aquatints, dry-point, woodcuts, lithographs, and colour prints. The catalogue, at the wish of the London patrons, will have a notably artistic value as a permanent record of the exhibition and of Italy; and we understand that his Excellency the Italian Ambassador has signified his intention of being present at the opening. The exhibition of the Aquarellisti Lombardi (Society of Lombard Water-Colour Painters) has fixed its opening for April 14 in the upper rooms of the "Cova" at Milan. This exhibition is limited to Italian water-colour artists residing in Lombardy, although in some instances English water-colour artists of high standing have received a special invitation to exhibit. Invitations have been sent this year to Mr. John Sargent, Mrs. Laura Knight, Mr. Anning Bell, and Mr. T. Robertson. The standard of merit of various exhibitions has been exceedingly well maintained in spite of the existing state of war.

# THE LONDON CHURCHES OF WREN AND LATER ARCHITECTS OF THE RENAISSANCE.

### No. XXI.—St. Margaret Pattens.

THE Church of St. Margaret Pattens fronts on Rood-lane near its junction with Eastcheap. Pattens were formerly made and sold in Rood-lane, the title of the church forming a reminder of the fact. The first church which stood on the site was rebuilt in the reign of Henry VIII., the second church being destroyed in the Great Fire. The advowson of the church originally belonged to the Nevill family, but in 1408 came into the possession of Sir Richard Whittington and other citizens, who subsequently bestowed it on the Mayor and Commonalty of London, and the rectory has since then continued in the gift of the Mayor and Corporation of London. The parish was united with that of St. Gabriel Fenchurch after the Fire.

The church is not of great interest, being commonplace in its detail and design and sombre in effect. It contains some good woodwork of the usual character. The tower and spire are among the most interesting of Wren's designs, as he has here produced a design of Gothic character in terms of the Renaissance. The belfry windows are square-headed and surrounded by an architrave, the angle pinnacles and balustrade are frankly Renaissance in detail, but the general effect of the composition is more suggestive of mediæval design than that of St. Dunstan, St. Mary Aldermanbury, or St. Michael Cornhill, in which churches Wren employed pseudo-Gothic detail. It may be assumed here that Wren was interested in seeing how completely the old Gothic combination of a simple tower and spire could be interpreted in another medium without the softening gradation of forms introduced in later days.

# THE CARPENTERS' HALL LECTURES.

THE Sixth Spring Art Lecture arranged by the Carpenters' Company was given in the Hall of the Company on the 8th inst. by Mr. W. Robert Colton, A.R.A., whose subject was "The Effect of War on Art." In the course of his remarks the lecturer said:—

"I think I cannot do better than to take for the text of my discourse a quotation from Ruskin's "Crown of Wild Olives," which we have probably all read and most of us forgotten in the many years of peace:—

"All the pure and noble arts of peace are founded on war. No great art ever yet rose on earth but among a nation of soldiers. There is no art among an agricultural people if it remains at peace. Commerce is barely consistent with fine art, but cannot produce it. Manufacture not only is unable to produce it, but invariably destroys what seeds of it exist. There is no great art possible to a nation but that which is based on battle.

"The first dawn of it is in Egypt, and the power of it is founded on the perpetual contemplation of death by the mind of a nation of which the ruling caste were priests and the second soldiers. The greatest works produced by them are sculptures of their troops going out to battle or receiving the homage of conquered armies.

"From Egypt art passes directly into Greece, where all poetry and all painting are nothing else than the descriptive praise or dramatic representation of war.

"Thus," he proceeds, "the arts are extinguished in the hands of the Romans and do not rise again until with Gothic chivalry there came back into the mind of Europe a passionate delight in war itself for the sake of war, and under the fighting kings of France, England, and Spain and under the fighting dukeships and citizenships of Italy art is born again and rises to her height in the great valleys of Lombardy and Tuscany.

"And from this time forward as peace is established or extended in Europe the arts decline. They reach an unparalleled pitch of costliness, but lose their life, enlist themselves at last on the side of luxury and various corruptions, and among wholly tranquil nations wither utterly away, remaining only in partial practice among races who like the French and us have still the minds though we cannot all live the lives of soldiers."

Ruskin, it seems to me, for the sake of fine language and complete ideas, was at times prone to overstate his case. Perhaps he underestimates the influence of religion on art, perhaps we shall see as we progress that his individual estimate of the art of countries and periods is somewhat prejudiced for the sake maybe of complete principles and rounded periods, and in his generalities he over-emphasises in some cases and does injustice in others. To my mind he despises unnecessarily the Roman nation, particularly in matters of art. I cannot but think in architecture, in their arches of triumph, the effect of war in the causation of fine art is most completely manifest. But with these reservations and in the larger view that Ruskin takes I agree with him, and I take his words, as I have said, in some ways as my text.

*Photo.: Geo. Trotman.*

**Wren's Churches: St. Margaret Pattens, Tower-Street.**

Of the horrors and terrors of war we all of us gathered here know enough, but we are inclined to forget that usually its effect is that of a violent tonic on the nation afflicted. Its influence is welding us once more into a social unit. It teaches us self-sacrifice for the good of an idea and of the community. It shows us clearly that selfish luxury and the accumulation of wealth are not the most important things in life or in the history of a nation. It stamps with a hall-mark what is the true gold and despises what we had begun to think real from its mere glitter. As far as art is concerned it was high time that war should come with its purifying fire. In some fifty years it had grown in Europe like unto a puffed-out and unhealthy fungus of enormous size, without beauty, without delicacy, and without health. A wave of diseased degeneracy had submerged philosophy, music, literature, and art to such a depth that, looking forward, I venture to prophesy that future centuries will gaze back with pity upon this period of mistaken morbidness.

We find perhaps in the German philosophers and musicians the first crystallised expression of this viciousness, but unfortunately we, with all other nations of Europe, cannot pretend that we are exempt. The morbid invention of the artistic mind is seen everywhere. We have Oscar Wilde, Aubrey Beardsley, and others; the Futurists, the Cubists, and whole schools of decadent novelists. We have had it also in the art of medicine, in the surgical rage for removing sundry portions of the internal organs, not when they were hopelessly diseased, but in a mad attempt to improve upon nature itself and in the taking of drugs for a special excitation of the human mind. In art, unfortunately, we cannot deny the technical skill of many of these unworthy craftsmen, and by the extent of that skill is increased the danger of the disease that has affected art.

Recently at a so-called important exhibition of sculpture a man of the world well known for his logical outlook on life, in reply to my demand, gave as his opinion that such an exhibition was to him "the direct road to hell." I am telling you this to show that the disease is fairly well recognised by others than myself and that those who know well the modern schools of thought and art cannot very well fail to agree with his verdict.

Of course you will find bordering upon the schools much art which is free from viciousness and merely foolish. An attempt to do without form in sculpture and poetry and the drama and without drawing and form in painting. A portrait may be painted with some straight lines of colour and a name, nothing else. Meaningless daubs and dashes of paint represent some profound philosophic thought which the innocent critic will discuss through columns of the credulous Press. The slides I now show you on the screen are quite innocently foolish, made for a foolish public which thinks that which it cannot understand must be profound.

In architecture we have perhaps kept saner than our neighbours and have not fallen to the new art eccentricities which are bad enough in any form of art, but in architecture meaningless desecration; doors and windows shaped like kidneys and other entrails of the human body are really anathema, but, alas! have not been unknown in Austria and Germany. In England we have run a little off the rails in producing architecture without much intention. We have elaborated the keystone to an awful extent. We use it without meaning and quite usually cut through lintels with it. We use arches without meaning simply as a decoration and we use pillars where there is nothing to

support. We riot in niches containing nothing and plinths and bases with nothing upon them. The pediment has long ceased to be the end of a gable, and is more or less used at the fancy of the architect. Nevertheless, I think perhaps our architecture has kept itself healthier than most of the arts, and I certainly do not agree with the discovery of a well-known statesman that at last he understood why the blind walked the streets of London always looking happy, as they were unable to see its architecture.

In sculpture, among other crazes, we have been badly bitten by that of mutilation. We have almost decided that the complete work is not artistic, and that mutilations of a figure are. Sane England has been so far influenced that at an ordinary exhibition I have noticed that the great proportion of works were mutilated—of course, counting an ordinary bust or head as a complete work. Not content with a beautiful figure conveying some idea, it has been discovered by a certain school that to lop off a leg or two legs, perhaps an arm or two arms and a head, greatly enhances the value of an artistic production. At any rate, it leaves more to the imagination. Some bolder genius of this type has gone a step further and split off a fragment of a face for exhibition, another has a head without a crown. Another unfortunate female figure had the appearance of having been caught sitting on the railway line—she had suffered amputation of both legs at the most unfortunate section, so that two full moons or discs were presented to our gaze as supporting her in hardly an artistic or poetic fashion. Then we have had marble with black veins, fissures, and even pieces let in used from choice; point holes left showing, and so much marble rough and unfinished, that an ordinary reasonable being can see no reason for commencing.

I do plead for a sane future, when peace comes, in art, including architecture. Let us make things as beautiful as we can; let us make things as healthy as we can. I do not plead for an innocence that is childish and hypocritical, but for a delight in the sane, and that reticence that has always marked the supreme endeavour of mankind in the masterpieces of the mind. The actor to be great may not rant and rave from the beginning to the end of his act; his power must be used with discretion to be great; it must be well considered to be effective and to appear spontaneous.

All good design has always been and always will be founded upon the centuries of good design that have gone before us. Original work must come as a natural growth in continuation of what has gone before, never by way of antithesis. To teach our art worker originality of design, it is necessary that he should be acquainted with the finest designs bearing upon his work for generations past, otherwise we shall be trying to grow a flower without a stem, without leaves or a root, which is manifestly impossible.

Now, if we rapidly consider the influence of sacred and secular war upon the art of the nations we shall find that from time immemorial it has been the custom to incise or to cut in relief pictorial representations or inscriptions commemorating victories, campaigns, or incidents in those campaigns, such as kings returning from war, the siege and assault of cities, etc. In the British Museum you will find several sculptured panels from the palaces of the Kings of Assyria, dated some 700 years before Christ."

After a survey of historical art, illustrated by lantern slides, Mr. Colton concluded by saying:—

"And now I will close my very sketchy survey of the influence of war upon art by a word upon what is likely to happen in the future. If this century is to have a real record of the war through its memorials that shall be worthy of the nation, I imagine there is but one way. Never before, I am bold enough to say, has there existed such a mass of craftsmen anxiously waiting to give expression to those feelings of patriotism, sorrow, and hero worship, that, when crystallised, will produce its record in stone, marble, and bronze.

The one thing needful to success is trust in the artist whether he be sculptor, architect, or decorative painter. Those who have given their lives to the consideration of the subject are the only guides worth considering, and if you attempt to fetter them through timidity or by that so-called expert guidance that is without real knowledge and is founded on empty words then we shall fail.

A memorial must be a love gift spiritually ungrudged both by its promoters and by its artist, if it is to be valued by succeeding generations. A utilitarian value detracts from its spiritual quality. A triumphal arch should be boldly nothing but an emblem of triumph. A war memorial should express simply the nobility of the individual or the common sacrifice in terms of art. A thing of utility called a war memorial is but begging the question—beyond its usefulness it has no value in the history of the nation. Perhaps I have told you before that to commemorate Prince Albert a certain town in England proposed an elaborate scheme for a drainage scheme, to be called the Prince Albert Memorial Sewer. I need hardly say that we shall not on these lines successfully compete with the nations of the past.

We are fighting the greatest war the world has ever seen at untold sacrifice. Let us sacrifice a little more, and in our gratitude make sure that its commemoration shall stand for evermore a worthy tribute to our heroes."

## THE LONDON SOCIETY.

THE fourth annual meeting of the London Society was held on March 9 at the Rooms of the Royal Society of Arts, Adelphi, under the chairmanship of Sir Aston Webb, R.A.

In moving the adoption of the Report and accounts the Chairman said there was a balance on the right side, although it was small. They were just paying their way, and hoped the members by their support would enable them to continue to do so. They had lost the services of their Secretary, who had joined the forces, and amongst those they had lost by death were Sir Laurence Gomme, Lord Alverstone, and Mr. Florence. They were proposing to have a few lectures this year. Their principal work during the year had been the development plan of Greater London, which was progressing favourably. They calculated that it would cost them about £1,000, towards which they had received about £900. They would not only have a very fine plan when it was finished, but they would also have the satisfaction of knowing they had employed a certain number of men in preparing it during these trying times. When it was published they would have to issue a sort of handbook to describe all the improvements and suggestions made on the plan, and by the help of that he quite thought they would be able to make it generally attractive and interesting to the public. Another matter dealt with was that of Charing Cross railway bridge. It had been before the Society for years, but just at the moment it came up in rather an acute form. A few weeks ago Mr. Newton, the President of the Royal Institute of British Architects, and he, as representing the London Society, called attention in the Press to the fact that the South-Eastern Railway Company had promoted a Bill in Parliament for the strengthening of the bridge, and suggested that such an unsightly bridge should not be strengthened, but had better be removed. Charing Cross Bridge had been built at two different times, the first part being built lightly and the second portion more strongly. Owing to the increase in the weight of the trains the company wished to strengthen the side nearest Waterloo Bridge, and they had hit on the ingenious idea of so strengthening it with iron arches. The result would be that from the Waterloo side one would see an arched bridge, whilst from the Westminster side it would appear as a girder bridge with pontoons. One could hardly think such a proposal as that would be deliberately carried out. Fortunately the matter had gone to the House of Lords, and in the absence of Lord Plymouth, through illness, Lord Beauchamp moved an amendment to the effect that it be an instruction to the Committee to take into consideration the requirements of the traffic for the river at this point and the effect which the Bill if carried as proposed would have upon it; and to hear evidence from the Royal Institute of British Architects, the London Society, and others. Lord Chilston, who represented the railway company, agreed to the instruction, and said the company recognised that the bridge was unsightly and would be glad to see it removed. At the same time he pointed out that the railway company were not philanthropists, and he (the speaker) was sure no one would misrepresent the South-Eastern Company by so describing them. The matter would come up again, but if Lord Plymouth was successful in getting the instruction passed they would have reason to be satisfied at what they had done for the moment. They had done their work during the year quietly and unostentatiously, but he hoped it had been to some extent useful. Such a society could only act by suggestion. They might not be able to carry all their suggestions, but they did undoubtedly broaden people's interest in London, and this might bring forth very considerable improvement in the future. There was only one London, and it was the duty of all who lived in it to make it beautiful and wholesome, and it was the aim of the London Society to do what it could in that way.

Sir J. Young, in seconding the motion, remarked that it was stated in a circular of the Society that the plan being prepared would contain imaginative proposals. London had lacked imaginative proposals for a very long time, and it was to be hoped that after the war a little imagination might be practically developed out of the plan for the development of Greater London by the removal of some of the eyesores and by adding to the means of transit from one part to another.

Mr. Douglas Fox said the members of the Institution of Civil Engineers hoped to be able to co-operate with the architects and other professional people in London to carry out the excellent schemes the Society were proposing.

Mr. Paul asked if anything had been done to get the unsightly ventilators removed from the Embankment-gardens. Now the Underground Railway was electrified they were no longer necessary.

The Chairman said the Society had approached the London County Council and the Underground Railway Company, and both were agreeable to the removal of the ventilators. It was the war which was responsible for the delay, but they would prod the authorities up a little later on.

The Report was then adopted.

On the motion of Mr. A. Bowker, the retiring members of the Council were re-elected, with Messrs. W. Vernon Crompton and P. Pilditch as additions.

Mr. Carmichael Thomas, in proposing a vote of thanks to the Chairman, referred to the great interest Sir Aston Webb took in the Society, and said it was due to him that they got the money to carry out the work of preparing the map.

The Chairman, in reply, said that perhaps he had not sufficiently thanked the draughtsmen for the work they had done. It was a difficult task and they were doing it extremely well.

## BOOKS RECEIVED.

THE GRAVELS OF EAST ANGLIA. By T. McKenny Hughes, M.A., F.R.S. (London: Cambridge University Press. 1s. net.)

ANALYTIC GEOMETRY. By H. B. Phillips. (London: Chapman & Hall, Ltd. 6s. 6d. net.; New York: Jno. Wiley & Sons.)

THE ORDERS OF ARCHITECTURE. By A Benton Greenberg. (London: Chapman & Hall, Ltd. 2s. 6d. net.; New York: Jno. Wiley & Sons.)

ALLAN'S HOUSING OF THE WORKING-CLASSES ACTS. Fourth Edition. (London: Butterworth & Co. 12s. 6d. net.)

THE RELATION OF SCULPTURE TO ARCHITECTURE. By T. P. Bennett. (London: Cambridge University Press. 15s. net.)

HYDRAULIC FLOW REVIEWED. By A. A. Barnes. (London: E. & F. N. Spon, Ltd. 12s. 6d. net.)

## LAW REPORTS.

KING'S BENCH DIVISION.

(Before Mr. Justice ROWLATT.)

### An Architect's Plans and Light Infringement: Northcote *v.* Minister & Co.; Minister & Co. *v.* Northcote & Nixon.

THIS was an action decided by Mr. Justice Rowlatt in the King's Bench Division on Friday last, March 10, after a week's hearing, which raised points of great importance bearing on the duties of architects in regard to the preparation of plans where claims affecting rights of light were likely to arise.

The plaintiff, Mr. Arthur Edward Northcote, architect, 19, Tothill-street, Westminster, sued Messrs. Minister & Co., Ltd., fashion-plate printers, 40, Great Marlborough-street, Westminster, to recover £347 11s., on account of professional services in the preparation of plans for the defendants for buildings at Nos. 55 and 56, Poland-street, Westminster. The defendants alleged that the plaintiff warranted by his plans that the buildings would not infringe rights of light and air vested in neighbouring owners, and that this warranty was not carried out, and the defendants set up a counterclaim against Mr. Northcote and also against Mr. Samuel Nixon, who had acted as surveyor for them, and who introduced Mr. Northcote as architect, claiming damages amounting to £225, part of which had been spent, it was said, in settling the claims of neighbours.

Mr. Gibbons, K.C., and Mr. Brandon were for the plaintiff; Mr. Holman Gregory, K.C., and Mr. Alex. Neilson were for Messrs. Minister & Co.; and Mr. Hollis Walker, K.C., and Mr. Woodgate were for Mr. Nixon.

The case was heard for a whole week, a large mass of evidence being called.

The substantial allegation made by Messrs. Minister & Co. was that, on the faith of the plans of Mr. Northcote, they entered into certain indentures of lease for buildings at Nos. 55 and 56, Poland-street, and it was claimed that Nos. 55 and 56 interfered with the air and light rights of the Roman Catholic schools in the rear, and that No. 55 interfered with similar rights of owners at No. 54. Messrs. Minister & Co. eventually called in Mr. Geo. Hubbard, F.R.I.B.A.

Mr. Northcote, by his reply, denied the warranty alleged, and said that it was always understood that certain claims for air and light would have to be dealt with, and a stipulation that the plans might have to be modified on account of the adjoining owners was, he understood, provided for in the contract with the lessors.

Mr. Nixon and Mr. Northcote gave evidence, and for the other side Mr. Hubbard's evidence on affidavit was submitted, and various architects were called to say that the plans did infringe air and light rights. Mr. Guildford Lewis, the solicitor for Messrs. Minister & Co., also gave evidence.

Mr. Justice Rowlatt, in delivering judgment, said that in regard to No. 56 he thought there was an infringement of the lights of the Roman Catholic schools, and they would have obtained an injunction against Messrs. Minister & Co. if the matter had been proceeded with. He did not think that a professional man was bound to be infallible, but he had to be careful and diligent. The case for Mr. Northcote was that he was authorised to chance the matter of the lights; but he was of opinion that Mr. Northcote misjudged the situation—he did not really apply himself to the angles of light, and the possible claims of the schools were not fully taken into consideration. It was not a very likely thing that a client would say to his architect, "I will chance it," in the sense that plans were to be drawn regardless of other people's rights; but it was likely that a client might point out the difficulties to the architect, but tell him to go on, especially at an early stage, but without limiting the architect's obligation to take care. Therefore he held the case against Mr. Northcote in regard to No. 56 was made out.

As to No. 55, the facts showed that difficulties were foreseen, and his view was that when instructions were given to Mr. Northcote it was understood that openings were left for modifications in the plans. It was understood that some little changes might have to be made, but it was not intended that the plans were to be so provisional that it might be necessary to make alterations that amounted to rebuilding or the making of an entirely different place. He held that the case as to No. 55 against Mr. Northcote was also made out.

As to the counterclaim against Mr. Nixon, he thought this failed, and he could not be held liable. He gave judgment for Mr. Nixon with costs.

The accounts as between Messrs. Minister & Co. and Mr. Northcote were subsequently gone into. Judgment was entered for Mr. Northcote on his claim for fees for £256 18s. 1d. (less £96 paid), and costs, except as to the issue of negligence, as to which Messrs. Minister & Co. were awarded the costs, and judgment was entered for Messrs. Minister & Co. on the counterclaim for £375 6s. 2d., and costs.

Mr. Gibbons, K.C., said that the question of the duties of an architect were involved here, and as in regard to No. 56 it was a very fine point, he asked for a stay, as it might be desired to take the opinion of another court. The application was granted on terms.

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OFFICIAL REFEREE'S COURT.

(Before Mr. MUIR MACKENZIE.)

### Action for Dilapidation: Bradshaw *v.* Kyffin.

THE plaintiffs in this case are the trustees of certain property in Holbrook-street, Homerton, and they claimed possession of six houses in that street by reason of alleged breaches of covenants of a lease to repair. The leases were dated July, 1844, and February, 1846, for terms of seventy-eight years, and contained the usual covenants for repairs, with a proviso for re-entry in case of breach. The defendant was a sub-lessee, and notices were served upon him owing to his failure to keep the houses in repair, particularly in regard to the pantile roofs, which, it was said, were in such a condition of dilapidation as to be detrimental to the property generally, as there was danger of the rafters rotting. The notices were served under the Act on May 17, and a period of three months was fixed within which to do the repairs, and something had been done; but plaintiffs' counsel said that it was not nearly sufficient.

The defendant admitted the title, and paid into Court a sum equal to the ground rent due to date, but denied that he had neglected to repair, and claimed relief under the Act.

Mr. Harvey Dyball, architect and surveyor, of 35, Bucklersbury, who surveyed the premises, gave evidence as to the condition in which he found them. He stated that for seventeen or eighteen years he had acted as surveyor to the plaintiffs' estate, which consisted of many hundreds of houses in various parts of London.

Mr. J. P. G. Kyffin, surveyor and estate agent, of 38, Launston-road, Hackney, son of the defendant, was one of the witnesses for the defence, and his evidence was to the effect that the houses were not in the dilapidated condition alleged by the witnesses for the plaintiff.

The Official Referee, in giving judgment, said that the covenants of the lease clearly gave the plaintiff the right to re-enter in the event of a breach of the covenant to repair; but such breach had not been proved. The houses, which were a small property, were managed by the defendant's son, who apparently kept, besides an estate office, an establishment for carrying on repairs, and at the time employed a builder accustomed to do work in the neighbourhood, who from time to time repaired the houses which were the subject of action. In 1915 the plaintiff's surveyor, Mr. Dyball, surveyed the premises, and found that certain repairs were wanted, and he served notices accordingly. Repairs were done under the direction of Mr. Percy Kyffin, and he thought that all the requirements had been complied with; but Mr. Dyball again inspected the premises, and furnished further particulars. In all, the repairs done by Mr. Kyffin amounted to £63; but the plaintiffs' case was that as little was done as possible, and what had been done had been badly done. The chief complaint was in regard to the roofs, and as to these the defendant proved that he had put them in repair, and had made them watertight in August, but said that the subsequent leakage was caused by concussions which had occurred. They were old houses, and he (the Referee) was not surprised that they were shaken by the explosions. He could not find that the defendant ought to be turned out because he had adopted a method of repairing the roofs which was not in accordance with the views of the plaintiffs. On the whole he held that the action failed, and the defendant was entitled to have it dismissed. That, however, did not prevent further action being taken in the event of the repairs specified not being done. The defendant ought to have the costs, but in awarding them he was going to make an unusual stipulation. The plaintiffs were entitled to have the premises put in repair, and he would not draw up the order for a certain time, giving the defendant liberty to apply to have the order drawn up when he was able to support it by an affidavit that the roofs had been properly repaired. When drawn up, the judgment would be for the defendant, dismissing the action with costs.

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### Case under the London Building Act, 1894: Notice of Work.

AT Greenwich Police-court on the 10th inst. Messrs. John Appleby & Sons, Ltd., builders and contractors, were summoned by Mr. B. Greig, District Surveyor for Deptford, for failing to serve a building notice in respect of work executed by them at their premises in Silwood-street, Southwark Park. A brick-built saw-mill partly erected about 1907 had not been completed, and one end was enclosed with a temporary wood frame, covered externally with felt. In the temporary end enclosure were certain doors and windows.

The new work, in respect of which the summons was issued, consisted of three wood posts supporting a beam at a height of about 10 ft. above the ground, from which wood rafters rose to a height of about 15 ft. against the temporary end. The span of the rafters was about 21 ft., and the structure covered an area of about 21 ft. by 33 ft. On the rafters open boarding was laid, and two tarpaulin sheets were spread thereon and tied at the edges. The tarpaulins could be taken off without affecting the timber construction. The purpose of the work was to provide shelter for work to be done at a machine-saw driven by a belt from shafting carried through the temporary end of the saw-mill. The shelter was unenclosed at the sides except where it abutted against the temporary wood and felt end, which extended to a greater height than the shelter.

The defendants pleaded not guilty. It was contended that the work formed an addition to the saw-mill, and that even if it were temporary, as the defendants stated, it should be licensed by the London County Council under sect. 83 of the London Building Act, 1894.

Mr. G. Hay Halkett decided that notice should have been served, and fined the defendants 2s. 6d. and £1 1s. costs.

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## PUBLIC WORKS IN AUSTRALIA.

THE Commercial Intelligence Branch of the Board of Trade is in receipt of an official statement giving details of items authorised by the South Australian Public Purposes Loan Bill, 1915, which provides for a total expenditure of £9,266,500; the following particulars of special interest are extracted therefrom:—

| | £ |
|---|---|
| *Railways*— | |
| Rolling stock, locomotives, machinery, and appliances for locomotive workshops, accommodation, line alterations, etc. ... | 1,584,700 |
| Railway construction ... ... ... | 1,962,000 |
| *Harbours*— | |
| Deepening and improvement of harbours at Port Adelaide, Port Pirie, and at outports ... ... ... | 272,000 |
| Murray River improvements... ... | 500,000 |
| *Water supply works* in districts of Adelaide, Baroota, Country, Beetaloo, Bundaleer, Barossa, Millbrook, Warren, and Pekina Creek | 1,465,000 |
| *Drainage Works*— | |
| Drainage works in South-Eastern District ... ... ... ... ... ... | 300,000 |
| Adelaide sewers ... ... ... ... ... | 200,000 |
| *Jetties and lighthouses* ... ... ... ... | 42,000 |
| *Buildings*— | |
| Erection of schoolhouses ... ... ... | 140,000 |
| Police barracks ... ... ... ... ... | 22,000 |
| Explosive magazines ... ... ... | 2,000 |
| Produce stores ... ... ... ... ... | 20,000 |
| The Magill Home ... ... ... ... | 52,000 |
| *Roads* ... ... ... ... ... ... ... ... ... | 173,000 |
| *Miscellaneous works*— | |
| Irrigation and reclamation of swamp land ... ... ... ... ... | 300,000 |
| Advances to settlers' and homes' funds ... ... ... ... ... ... ... | 600,000 |
| Sheds and tanks for settlers ... ... | 25,000 |

# GENERAL NEWS.

### Presentation to Sir A. Geikie.

The bust of Sir Archibald Geikie by Professor E. Lanteri is now finished, and it is to be presented to the Board of Education.

### The Friday Club.

The painter members of the Friday Club will hold their annual exhibition at the Hall of the Alpine Club, Mill-street, Conduit-street, Bond-street, W. It will consist of oil and water-colour paintings, drawings, etchings, etc. The exhibition will open to the public on Monday, March 20, and will continue till Saturday, April 8.

### Patronal Window, St. Kenelm's Chapel, Clent.

In reference to this illustration, which we gave in our last issue, we have been asked to point out that the window was the first war memorial of any kind erected, and it was dedicated by an anonymous donor to the memory of children who had fallen or would fall in the present war, the subject of St. Kenelm, the child martyr, being a most appropriate one for the purpose.

### Industrial Development.

Mr. Harold Cox, in an address at the Institution of Civil Engineers recently on "Industrial Development," pointed out that after the war there would be hundreds of thousands of men returning to this country looking for work, and changes would occur which would have a tremendous effect upon our social life. All important was it we should look ahead and act at once. Vague talk would not put the necessary machinery in motion. The Government Consular system he considered of little good, and he suggested the establishment of an organisation, representing practically all the trade of the country, which would develop our trade and commerce all over the world. Road-making and planning of towns and cities should be considered, and he could imagine no finer task at the end of the war than the reconstruction of the capital of the Empire.

### Town Planning in Babylon.

Professor W. L. King, Assistant Keeper of Egyptian and Assyrian Antiquities in the British Museum, gave the second of a series of lectures on "Recent Excavations in Mesopotamia" at the Royal Institution recently. In recent excavations, he said, portions of the older city of Babylon had come to light, and it was shown that as early as the second millennium B.C. the streets were carefully laid out, the main thoroughfares running straight through and parallel to the river, and the others crossing them at right angles. We had in Babylon recovered what was undoubtedly the earliest attempt at town planning on scientific lines. It was only when we came to the Babylon of Nebuchadnezzar and his successors that we found traces of any building of a public character, and here the excavators had had some striking successes and one equally striking failure. They had recovered and identified Babylon's great temple, the throne of Marduk, the city god, close to the old foundations of the temple tower, the original of the Tower of Babel. They had found the gate of Ishtar, which spanned Babylon's sacred way. They had recovered Nebuchadnezzar's palace, and it was possible now for anyone to stand in the ruins of the throne-room and note the recess in the wall in which the throne was placed, or tread the endless corridors and chambers of the palace. It was in this area that the excavators made their one great failure—their proposed identification of the hanging gardens of Babylon. The descriptions left by classical writers suggested that these royal gardens towered on high above the surrounding buildings, and it had been suggested now that they lay in the north-east corner of the palace, supported by massive vaulting, but lying deep below the palace level. On this theory the gardens would have formed a sort of sunken courtyard, rather like some of our modern winter gardens. Such a construction could have caused little wonder, and it seemed more probable that the subterranean building was simply a palace granary.

### Institution of Civil Engineers.

At an ordinary meeting of this Institution held on the 7th inst. Sir John Wolfe Barry, K.C.B., LL.D.(Glas.), F.R.S., was elected an honorary member, and Mr. Alfred Cecil Eborall a member. The election of forty Associate members and admission of two students was also reported.

### National Gallery Purchases.

It is announced that purchases have been made by the trustees of the National Gallery :—1. "Madonna and Child," by Masaccio (from Brant Broughton), purchased with the generous assistance of the National Art Collections Fund, who contributed half the purchase-money. 2. "La Collation," by Pieter de Hooch. Both these pictures were purchased out of the interest of the Temple West Fund. The latter picture will be on exhibition in Room XIX.

### Royal Society of British Artists.

In the galleries of the Royal Society of British Artists, in Suffolk-street, Pall Mall, an exhibition is to be held of the Italian Society of Etchers and Engravers in aid of the Italian Red Cross; and of the sketches by members of the Royal Society of British Artists, in aid of the Charing Cross Hospital Fund for Wounded Soldiers. The exhibition will be opened by his Excellency Marchese Guglielmo Imperiali, the Italian Ambassador, on Saturday, March 18. The exhibition will remain open until May 13.

### Development of Cement-Making Industry in the Urals.

The British Vice-Consul at Ekaterinburg (Mr. T. H. Preston) reports that the first cement works were opened in the Urals at Neviansk (Ekaterinburg-Perm Railway) during 1914. Formerly the Urals as well as the whole of Western Siberia were dependent on cement transported from Russia from the Volga works at Saratov. The whole production of 500,000 barrels (about 83,333 tons) was sold during 1915. The Ural district is likely to be in the future a very extensive market for cheap cement, especially in view of its employment in the making of ferro-concrete, which is now beginning to be extensively adopted both in private buildings and in various works and factories. It is only since the opening of the new cement works in the Urals that ferro-concrete has become practicable, and it is likely to become very popular both in the Urals and Siberia. It may interest architects and builders in the United Kingdom to know that architectural and building firms, among whom Germans used to predominate, did considerable business in the Ural district in ferro-concrete structure up to July, 1914.

### The Peabody Trust.

In the fifty-first annual Report of the Governors of the Peabody Donation Fund it is stated that the surplus income for the year from rents and interest was £42,453 1s. 9d., as shown by the accounts, this return being 2·25 per cent. on the capital of the fund at January 1, 1915, against 2·48 per cent. last year.—The capital expenditure on lands and buildings to the end of the year was £1,879,379 17s. 10d.—The ten blocks of self-contained tenements at Rodney-road, Walworth, were opened in March and are fully occupied.—An additional block of self-contained tenements is being built on the Bethnal Green Estate, together with hot and cold baths and a steam laundry.—The agreement with the Bridge House Committee for the purchase of a site adjoining the present Southwark Estate has been signed and sealed. Owing to the war the completion of the transaction has been postponed by arrangement with the Bridge House Committee. A site has been purchased adjoining the Camberwell Estate, on which four blocks of self-contained tenements can be built.—At the end of the year the Governors had provided for the artisan and labouring poor of London 15,885 rooms, including those occupied by the superintendents and porters, besides laundries and lavatories. These rooms provide 6,634 separate dwellings, viz., 300 cottages of five rooms, twenty-three tenements of five rooms (superintendents' quarters), 240 tenements of four rooms, 2,200 of three rooms, 2,778 of two rooms, 1,084 of one room, and nine shops with sixty-one rooms attached.

### The Port of Havre.

The Commercial Intelligence Branch of the Board of Trade is informed by the Foreign Office as follows:—The French Government desire it to be known that the Port of Havre is much congested, and it is consequently desirable that British exporters of goods for Switzerland should send, in their own interests, as little as possible by this route for the present; meantime, efforts are being made to relieve the congestion.

### The Great Tympanum at Westminster Cathedral.

The mosaic tympanum over the main doors of Westminster Cathedral has now been exposed to view. The great semicircular space has five figures. The central group represents God the Son attended by the Virgin Mother and by St. Joseph. Christ is seated on a throne, one hand raised in blessing the world. On the extreme left St. Peter is shown and on the extreme right St. Edward the Confessor It is the work of Mr. Robert Anning Bell, A.R.A., of the Glasgow School of Art.

### Demolition of St. Peter's, Liverpool.

The Church of St. Peter, Liverpool, which has for so long been the parish church of the city, is to be demolished. The Order in Council which decrees that the demolition is to be carried out will not be carried into effect until the cathedral is completed, so that under existing circumstances the old church has still a few more years to stand. When the church is demolished it is supposed that the site will be sold for secular purposes, the proceeds being devoted towards the cathedral endowment.

### The Athenæum Index.

The Athenæum Subject Index to Periodicals covers some 400 magazines and proceedings of societies. The work of indexing is undertaken voluntarily by a number of librarians; the publication is not issued for profit. The current issue deals with the subject of Education, and is the seventh of a series of twelve class lists covering the year 1915. An annual consolidation will be issued later. The present list contains 517 index entries, selected from 103 journals, and distributed under 228 headings, with many references in addition.

### The English Chancel.

The Oxford University Press will publish shortly another volume by Mr. Francis Bond in the "English Church Art" series entitled "The English Chancel." A detailed history is given of the English altar and its successor, the Communion table; also of the seventeenth-century controversies by which altar rails were introduced and placed sometimes on all four sides of the table, sometimes on three sides, and finally on the west side only; with this is incorporated an account of the various forms of the English reredos and other accessories of the altar. Then follows a description of the piscina in both its forms, the credence shelf, and the sedilia. The existing examples of the Easter sepulchres are illustrated, the ritual of Passiontide described, and the sedilia and piscina and other contents of the English chancel are fully illustrated.

### Portland Cement Production in the U.S.A., 1915.

H.M. Consul-General at Chicago (Mr. H. D. Nugent) reports that according to an estimate of the output of Portland cement in the United States in 1915, made by the United States Geological Survey, the production was about 85,732,000 barrels (of 380 lb. net), as compared with 88,230,170 barrels in 1914, a decrease of 2·8 per cent. The stocks of finished cement at the mills amounted to about 11,583,000 barrels as compared with 12,893,863 barrels in 1914, a decrease of 10·2 per cent. The slight decrease in production and the considerable decrease in stock indicate greater caution in the industry, which in the preceding few years showed a tendency towards over-production. The general prices averaged a few cents lower per barrel in 1915 than in 1914, although towards the end of the year they were considerably higher. The statistics show that the general volume of business was about the same as in 1914. The outlook for 1916 is stated to be brighter than for several years.

## BOOKS.

*The Arts in Early England.* By PROFESSOR BALDWIN BROWN. Vols. III. and IV. "Saxon Art and Industry in the Pagan Period."

THESE two volumes comprise a peculiarly thorough and searching analysis of the subject, and have been prepared with a keen regard for accuracy and clear exposition. In his prefatory note the author explains the plan upon which the work has been constructed and his methods of reference, and he may be congratulated on having presented an immense mass of information in a convenient form for the student, who will not fail to recognise the value of the book as a complete and exhaustive work of reference.

The art of the Anglo-Saxons is probably as little studied and understood as any of the periods and phases of artistic expression, and Professor Baldwin Brown has done a great service in illustrating its scope and peculiarities with such thoroughness and minute description. The illustrations are prolific and are photographic, and are not only very clear but in most cases the scale is indicated, an important detail where ornament is concerned.

The author, in the Preface, alludes to the popular estimation of the Anglo-Saxon as of a stolid and inartistic race, but even a cursory examination of the evidence in these volumes will serve to expose the fallacy of such a view. On the whole, while the art of the Anglo-Saxons might in a degree be described as barbaric, it compares with the general mass of English ornament of the present day to the detriment of the latter; there is a directness of purpose and a logical simplicity of design and craftsmanship displayed in many of the objects illustrated in this work which seem to be generally lacking to-day. This is particularly noticeable in the fibulæ and similar articles of dress or jewellery. The author has been careful in tracing the origins of the ornamental forms and motives characteristic of the work of the Anglo-Saxons, and while it is admitted and obvious that most of these motives have a precedent or parallel in the work of the Romans, the Celts, etc., he very justly claims a definite degree of originality and racial characteristic for the Saxons.

A very large proportion of the objects illustrated consist of fibulæ or brooches, and other dress fastenings, and coins, and those whose acquaintance with the art of this period is superficial and whose interest has been only casual will be astonished at the degree of technical skill and artistic ingenuity displayed by the Anglo-Saxon craftsmen. In some of the borrowed motives, notably those derived from Roman sources, there is a certain tendency towards coarsening, but on the whole the departures from precedent are marked by a vigour and purpose which entitle them to consideration as genuine works of art.

As the author remarks, nearly all the objects referred to and illustrated in these volumes have been discovered in Anglo-Saxon burial grounds, hence the preponderance of brooches and articles of personal adornment. Some chapters are devoted to these burial grounds, and to the history and locality of the migration and settlement of the races in question, and, although of more interest to the antiquary than the art student, these considerations are essential to the right understanding of the subject and throw considerable light upon it.

Six chapters come under the heading of Tomb Furniture, and deal successively and in detail with the classes of objects found in the tombs and graves. A valuable analysis of the technical processes employed is given in Chapter VI., and is especially instructive and useful in forming an estimation of the artistic value and significance of the objects under discussion.

With regard to questions of design and artistic motive, in his desire to trace origins, causes, and precedents the author is perhaps inclined to give too little credit to spontaneous originality. Take, for example, the spiral, a common natural form which may in many cases as well owe its origin to the mind and fancy of individual craftsmen as to a deliberate adaptation from precedents in artistic expression.

Amongst the profuse collection of illustrations of these English works of long ago there are too many examples of excellence to make individual reference desirable, but mention may be made of the Kingston Brooch, admirably shown in colour on the frontispiece, and the cruciform fibula illustrated on Plate XLIV., both of which in themselves are sufficient to command our respect and excite interest in the period, and the people who produced them.

From a sketch by Mr. A. L. Snow. (*See* "Some Sketches in France," *page* 216.)

## Leading Contents.


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## ILLUSTRATIONS.

### Some Sketches in France.

BEAUVAIS.

THE cathedral was begun in 1225, but in 1284 the choir vaults fell in and completely ruined the building, which had to be rebuilt. Work on the transepts was only commenced in 1500. They were finished in 1548. Not content with so vast an achievement, the erection was commenced of a great tower over the crossing, 153 metres high. To attempt this before having even started the nave proved a costly blunder, as the piers of the crossing, lacking the necessary abutment, yielded, and the tower and all came crashing down in 1573. The nave never was commenced, and the building as it now stands ends with the transepts.

All views, all recollections of Beauvais are dominated by this building, so vast even in its incompleteness, so singularly satisfactory, though flamboyant, achieving an immense height without the lean and spiky appearance that so often accompanies it, and skilfully preserving everywhere the scale set by the entrance doors and the great flight of steps, so unusual a feature in a Gothic church. Nowhere does one lose consciousness of its immensity. The great transepts are splendid examples of flamboyant architecture at its best. In general appearance they are the same, but the south one is the richer and finer of the two, skilfully designed in receding planes. The great window forms the chief feature, its flowing tracery properly filling the circle without creating awkward shapes and angles, as at Amiens and Rouen. The depth of the two planes of tracery and the huge covering arch have more than a little to do with its splendid appearance.

The transept is flanked by octagonal turrets, which only slightly diminish until they reach the gable, where they terminate in little pavilions, Renaissance in detail and outline, but perfectly harmonious and appropriate in appearance. The whole composition evidences an extraordinary agility in design, and represents one of the most truly impressive and great achievements of any time. Whether regarded as architecture or engineering, it is a never-ceasing wonder, a triumph in each field, an everlasting glory to the town that built it.

EU.

Eu, locally known as La Ville d'Eu, is near Dieppe, and, although little known, possesses much of real interest. Our illustration shows the apsidal termination to the fine church, the nave of which is one of the earliest Gothic monuments in Normandy. It was probably commenced about 1186, after the death here of St. Lawrence, Archbishop of Dublin, while travelling in France. It was probably finished about 1227. The exterior of the nave, eleven bays long, is severely simple. The interior is an unusually pure example of early Gothic, with a nave arcade of a design only found in one other church in France, viz., Rouen Cathedral. It has two rows of superposed arches opening into the aisle.

The choir and chevet are later additions in the flamboyant style.

PICQUIGNY.

Picquigny, a few miles from Amiens, has a church which is a medley of architectural fragments of the thirteenth, fourteenth, fifteenth, and sixteenth centuries. It has a slated spire and fine tower, with angle buttresses treated in a bold and interesting manner. On the north the tower is well led up to by a low transept and turret. The exterior of the nave is very plain; on its north side is a pretty little Renaissance doorway, with circular pediment and sloping tiled roof over, which gives it an oddly humble appearance. The west door has also pilasters and a cornice. The interior is of little interest. There is an unvaulted twelfth-century transept.

There is also a ruined castle of great interest at Picquigny.

### Wren's Churches.

WE give reproductions of plates from "The Churches of Sir Christopher Wren," by J. Clayton, published by Messrs. Longmans, Green, Brown, & Longmans, which we give by the courtesy of Messrs. Longmans, Green, & Co. They illustrate St. Mary Abchurch, which we described in our New Year's number, St. Margaret Pattens, notes on which will be found on page 211, and St. George, Botolph-lane, one of the smallest of Wren's churches, now demolished.

### The Work of the Modern Indian Master Builder.

WE illustrate two examples of the modern Indian master builder, reproduced from "Indian Architecture," by Mr. E. B. Havell, by permission of Messrs. John Murray. We allude to them in our leading article.

### Indian Official Architecture.

THESE four illustrations of buildings recently erected by the Public Works Department are taken from the annual Report of Architectural Work in India for 1914–15. We allude to them in our leading article.

## MEETINGS.

FRIDAY, MARCH 17.

*Institution of Mechanical Engineers.*—General meeting. 8 p.m.

MONDAY, MARCH 20.

*University Extension Lecture (at the Victoria and Albert Museum).*—Mr. Banister Fletcher on "Georgian Town and Country Houses." 4.30 p.m.

TUESDAY, MARCH 21.

*Institution of Civil Engineers.*—Sir George Cunningham Buchanan, C.I.E., M.Inst.C.E., on "The Rangoon River—Training Works." 5.30 p.m.

WEDNESDAY, MARCH 22.

*Carpenters' Company.*—Mr. H. Hughes-Stanton on "Landscape Painting." 7.45 p.m.

*Royal Society of Arts.*—Rev. P. H. Ditchfield, M.A., F.S.A., on "The England of Shakespeare." 4.30 p.m.

THURSDAY, MARCH 23.

*University Extension Lecture (at the British Museum).*—Mr. Banister Fletcher on "S. Sophia, Constantinople." 4.30 p.m.

## FIFTY YEARS AGO.

### Sanitary Matters.

*Sunderland.*—The Sanitary Committee of the Corporation, dissatisfied with the Report of the guardians' medical deputation, as to the prevalence of fever in the parish, have themselves appointed another deputation of medical men, as well as a Committee, to examine fully, and report upon the causes.

*Gateshead.*—Typhus still lingers in Gateshead, not merely confining itself to the houses of the poorer classes, but sometimes making its appearance in the houses of the more wealthy of the population. A correspondent of the *Gateshead Observer* states that he heard numerous complaints against the Corporation for not emptying ashpits and middens when requested.

*Manchester.*—Fever is on the increase here, the weekly number of new cases having risen from 122 to 135, of which fifteen terminated fatally.

[*** From the *Builder* of March 17, 1866.—ED.]

## CORRESPONDENCE.

### Employment of Discharged Sailors and Soldiers.

SIR,—In view of the urgent national importance of the employment of the discharged sailor and soldier, may I ask you to draw special attention to the meeting to consider their settlement upon the land?

This Association has prepared a special Report on the Departmental Committee's Report on the subject, and this will be discussed at the meeting at the Mansion House on March 22 at 3 p.m., the Lord Mayor presiding. Lord Selborne, the President of the Board of Agriculture, will speak, and most of the societies interested, both in the welfare of sailors and soldiers and in the development of rural England, will be represented.

I shall be pleased to send cards of invitation to any of your readers applying for them.

EWART G. CULPIN,
Secretary.
*The Garden Cities and Town Planning Association,*
*3, Gray's Inn-place,*
*Gray's Inn, London, W.C*

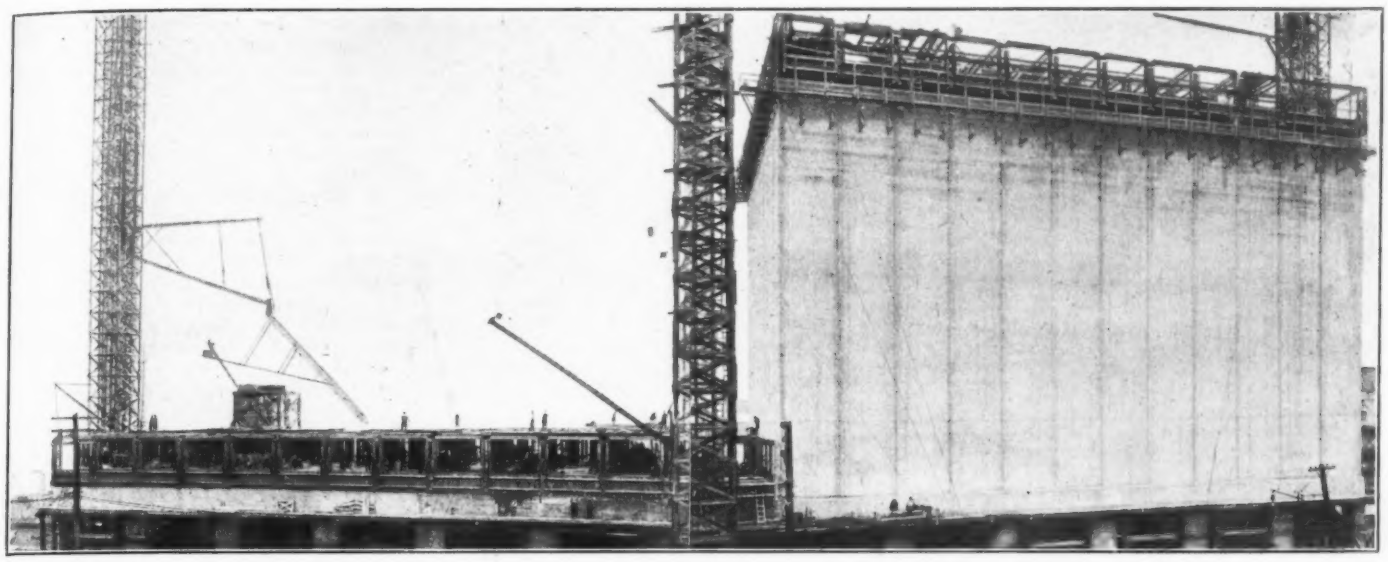
PRIMITIVE METHODIST CHURCH AND SCHOOLS, SALISBURY.

The foundation-stones of the church were laid on March 8. The church will accommodate over 400 persons, and is of late Gothic design freely treated. Externally the buildings are faced with Southwater red facing bricks, the dressings being of Bath stone. The contractor for the first section—church, tower, and spire, and vestries—is let to Mr. J. Nichol, of Southampton, and the amount is £3,463, exclusive of seating, and the buildings are being carried out from the designs and under the superintendence of Messrs. George Baines & Son, architects, 5, Clement's Inn, Strand, London, W.C., and Leeds.

TECHNICAL COLLEGE, CARDIFF.

The new Technical College in Cathays Park, Cardiff, has just been opened. The total cost of the College will be nearly £62,000 when it is fully complete. The building is in the form of three sides of a square, the fourth being reserved for future extension when necessary. Two rows of workshops, top-lighted, have been erected in the area between the north and south wings and parallel to them, while the assembly and examination hall, which is centrally situated and has a seating capacity of 400, connect them. Large workshop accommodation has been set apart for the building and engineering trades. Altogether fifty lecture-rooms, workshops, and laboratories have been provided. The architects are Messrs. Ivor Jones & Percy Thomas, Mr. J. E. Turner, of Messrs. E. Turner & Sons, the contractor.

# CONSTRUCTION SECTION.



**Harbour Elevator, Montreal, Quebec, showing forms in first and final positions.**

## REINFORCED CONCRETE GRAIN ELEVATORS FOR AUSTRALIA.

AUSTRALIA has for many years considered the possibility of handling its grain from the farmer to the seaboard by what is known as the Bulk System. It is estimated that by this system the farmer will save from £250,000 to £300,000 per annum upon his sacks alone. The South Australian Royal Commission on the question of the Marketing of Wheat, in their Progress Report, dated 1908, and their final Report, dated 1909, dealt exhaustively with the question of handling the grain in bulk, which would necessitate the erection of a number of grain elevators under Government control.

The Government of New South Wales has now decided to proceed with a scheme, which calls for an expenditure of £2,000,000, and they have entrusted the designing of these elevators to the John S. Metcalf Company, Ltd., who will also, by the terms of their agreement, act as superintending engineers. The preparation of plans and specifications is already in progress, and the actual building is expected to start about July this year. The scheme applies only to New South Wales, but it is expected that similar schemes will be carried out by South Australia, Victoria, and Western Australia.

The South Australian Government, before signing a contract for the actual designing of grain elevators, decided to have a report made on the possibilities of handling the grain by the Bulk System, and engaged the Metcalf Company to draw up this Report. The work was started early in 1915, and completed about January, 1916, when it was submitted to the Government.

The Report calls for :—

Sixty-four Country Elevators, capacity 40,000 bushels, at £3,205 each.

Thirty-four Country Elevators, capacity 50,000 bushels, at £3,720 each.

Twenty-two Country Elevators, capacity 60,000 bushels, at £4,105 each.

Four Terminal Elevators :—

1. Port Lincoln, 420,000 bushels, at £108,320.
2. Port Pirie, 620,000 bushels, at £121,580.
3. Wallaroo, 620,000 bushels, at £143,460.
4. Outer Harbour, 820,000 bushels, at £158,195.

The cost of the elevators will be decided by tenders ; the costs given are the approximations suggested in the Report. The elevators will be constructed in reinforced concrete.

The same company, we may add, designed, in 1915, the grain elevator now in course of construction for the Armour Grain Company of Chicago, and the accompanying illustrations will give an idea of a modern grain elevator with a capacity of 10,000,000 bushels. It comprises a working house of one million bushels capacity, with facilities for receiving grain at the rate of 360 cars in ten hours, and shipping to cars at the same rate. At the same time, it will be arranged to dry 9,000 bushels of grain and bleach 24,000 bushels of oats in ten hours, besides large clipping and cleaning capacities. There will be a marine tower for receiving from vessels at the rate of 20,000 bushels per hour, and a river house equipped to ship to boats at the rate of 120,000 bushels of grain per hour, and with a shipping gallery to carry grain out along the wharf for trimming the vessels after they have received the bulk of their load at the river house. Between the working house and the river house there will be a storage house, which will bring the ultimate storage capacity of the plant to approximately 10,000,000 bushels.

All the machinery will be electrically driven, deriving power from a complete independent power plant of 4,700 h.p. Water tube boilers and turbo generators will be used. Complete facilities will be provided for collecting the dust caused by the handling and cleaning of the grain, and for sacking this dust or handling in bulk. An independent office building for convenience of the operators, a welfare building for employees, a shop building, and 1,200 ft. of wharf are also included in the work.

An interesting feature from a construction point of view is the moving forms used in the erection of bin walls in Canada and the U.S., although practically unknown in this country. These moving forms have many advantages over the usual forms of shuttering in concrete work. The success attained in the construction of the harbour elevator No. 1 for the Harbour Commissioners of Montreal will illustrate the speed of erection which can be obtained by this method. The storage bin walls were each 81 ft. to 96 ft. high, or 7,536 yds. of concrete, and took only the equivalent of 232,000 sq. ft. of timber, 1 in. thick, including the scaffolding.

The pouring of the concrete was started on September 3, and on September 10 the walls were 42 ft. 6 in. high, a total of 2,946 yds. of concrete having been placed in these walls in seven days. A further advantage to be claimed for the moving forms is in the finish of the walls ; both sides are quite smooth, and the usual unsightly timber marks on shuttered concrete are eliminated. The total wall, 96 ft. 7 in. high, was completed in seventeen days, with an average of 5 ft. 8½ in. per day—this being considered only ordinary progress.

The forms are built of wood, and are like parallel fences 4 ft. high, held apart by yokes to give the thickness of wall required. These 4-ft. fence forms are made and erected for the whole area occupied by the bin walls before any concrete is poured, and the separate form units are yoked and fastened to act as one unit, sometimes as much as an acre in area. As concrete is poured in between the parallel fences the forms themselves are gradually and continuously raised. The space between the forms is covered over to give a level runway for the concrete buggies, so that from above the moving forms look like a big level platform with open slots left where the concrete for the walls is to be poured. Concrete buggies are wheeled about over this platform with as much safety as if they were on the ground.

Amongst the plants designed and in some cases erected by this firm recently are those for the Grand Trunk Railway and the Canadian Pacific Railway on the Georgian Bay, and that for the Port of Montreal are perhaps the most interesting. The company also designed and constructed the first Manchester Ship Canal Elevator, and the No. 2 elevator just completed at No. 9 Dock was also designed by them and erected under their supervision. They are engaged at the present time upon the designs for the silos and grain handling plant for Messrs. Guinness's new brewery at Trafford Park, Manchester.

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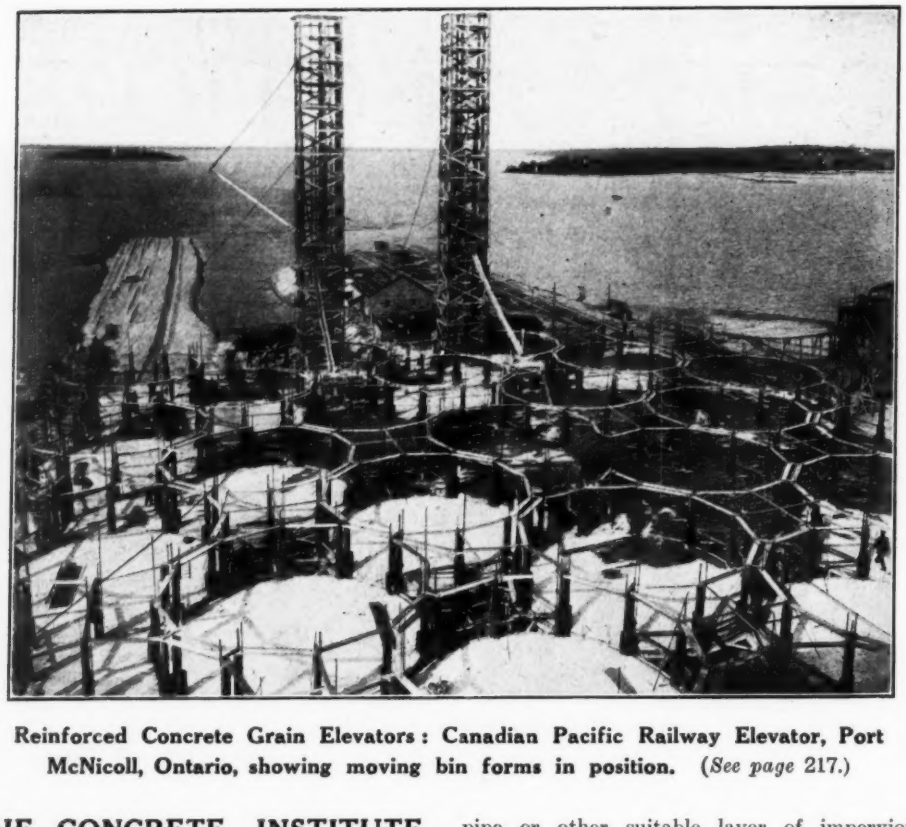
### EXTENSION OF ANCOATS HOSPITAL.

The extensions of the out-patient department of this hospital consist in the erection of two examination-rooms for surgical and medical cases, measuring respectively 20 ft. by 15 ft. and 18 ft. by 15 ft. ; a pathological laboratory, and a room in which is installed the cardiographic apparatus recently presented to the institution. There is also a "dark-room." All these rooms are approached by means of a corridor leading from the patients' waiting hall. The five smaller examination-rooms have been remodelled, the roofs reconstructed, and lantern lights inserted. The architect is Mr. W. Cecil Hardisty, F.R.I.B.A., of Manchester.



**Reinforced Concrete Grain Elevators: Canadian Pacific Railway Elevator, Port McNicoll, Ontario, showing moving bin forms in position.** (*See page* 217.)

## THE CONCRETE INSTITUTE.

AT a meeting of the Concrete Institute on the 16th ult. Mr. C. F. Marsh, M.Inst.C.E., Vice-President, read a paper on "Reinforced Concrete as Applied to Waterworks Construction," in the course of which he said:—

"In the construction of works specially required for the purpose of the conveyance and storage of water reinforced concrete can be usefully employed for many purposes. The chief uses for this material are the construction of dams for impounding water, of aqueducts and pipes for its conveyance, and reservoirs and tanks for its storage. There are also many works of an incidental nature for which reinforced concrete may be employed, amongst which are retaining walls, bridges, slope coverings, buildings, fencing, and sundry other structures of various descriptions essential for the completion of any large system of water supply. In this paper only the main uses of the material will be dealt with, as the incidental uses entail its general application to engineering works.

The concrete used for structures, which must resist the pressure of water, should be richer in cement than that used for the generality of structures. For reservoirs, tanks, and dams, where there is sufficient thickness, the concrete should be mixed in the proportions of 1 : 1½ to 3, or 810 lb. of cement to 13½ cubic ft. of sand and 27 cubic ft. of broken stone or shingle, which mixture is sufficiently watertight for any but very considerable heads, but for pipes and structures of small thickness, say, less than 3 in., a mortar mixed in the proportions of 1 to 1½, or 1,620 lb. of cement to 27 cubic ft. of sand, should be used. This mixture is, of course, no more resistant to water pressure than a 1 : 1½ to 3 concrete, but in a thin structure there is a danger in the use of stone or shingle, since two pieces may possibly come together, and any failure in the proper consolidation of the concrete may leave a plane of leakage through the concrete. The size of the broken stone or shingle should not exceed such as will pass through a ¾-in. square-meshed sieve, and may with advantage be ½-in. gauge. It is not advisable to use a richer mixture, as rich mixtures shrink more when drying and expand more when wet than leaner mixtures, and consequently cracks are more likely to be induced; while it has been proved conclusively that with proper care in mixing and placing a mixture in the proportions of 1 to 1½ to 3 is practically impervious under considerable heads. For pipes under pressures exceeding about 40 ft. special linings should be used, such as the sheet-steel tubing in a Bonna pipe or other suitable layer of impervious material.

For any structure which has to resist the percolation of liquids it is advisable, in my opinion, to mix some waterproofing compound with the concrete, or to otherwise provide against leakage by the use of a soap and alum wash, paraffin wax, or other protective coating.

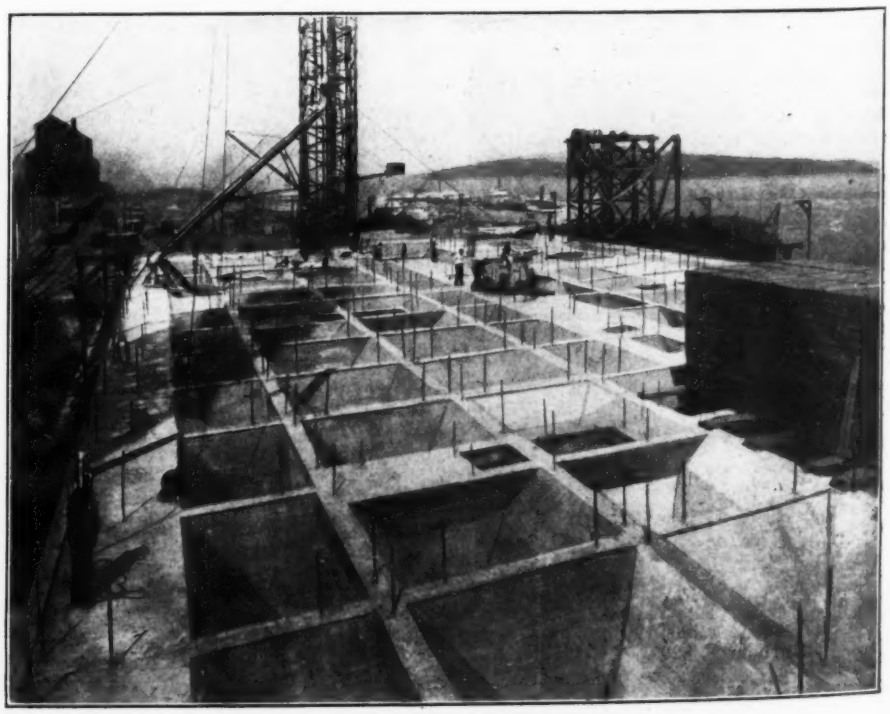
For increasing the imperviousness of concrete or mortar ordinary hydrated lime has been used very successfully and appears just as effective as any of the patent compounds on the market. It can be used in proportions up to 10 per cent. of the weight of cement without injuriously affecting the strength of the mixture, but 5 per cent. is sufficient for any ordinary purpose. The concrete should always be kept damp for some time after moulding, depending on the richness of the mixture. The period in the case of a 1 : 1½ : 3 mixture should be about four weeks.

In structures of considerable length, which may be alternately wet and dry and are exposed to the variations of temperature, it is advisable to provide against cracking, which is almost certain to occur. Such structure should have specially constructed contraction joints not more thant 30 ft. apart, leakage being prevented at the joints by the insertion of sheet lead or copper baffles extending well into the concrete on each side of the joint and bent over at the extremities to form a good key. In the construction of all structures to resist the pressure of liquids, special care is necessary to provide adequate reinforcement against shrinkage due to the setting of the concrete, fall of temperature, and excessive dryness.

Dams for impounding water have not been constructed of reinforced concrete in this country to any extent up to the present time, but there have been many cases in America where this material has been used for such dams. When reinforced concrete is employed for the construction of dams they are usually of a hollow form of construction, having up-stream and down-stream slabs, supported on cross walls carried upon a foundation slab. From the foundation slab a core wall must be carried down under the bottom of the up-stream slab, and extended well into a watertight stratum. The provision of an adequate cut-off wall is most essential, as some of the dams already constructed of this material have failed owing to the neglect of this precaution. The up-stream slab is generally constructed with a flat slope not steeper than 1 to 1, since the flatter the slope the more uniform is the pressure on the base.

With a dam of this type, as the reservoir fills, the line of resultant pressure on the base will at first become farther and farther up stream from the centre of pressure on the base with the reservoir empty. When the reservoir has filled for a certain proportion of its depth depending on the slope of the up-stream slab, the line of resultant pressure on the base moves back towards the centre until under the limiting flood conditions it will generally be found to be slightly on the down-stream side of the centre of pressure on the base with the reservoir empty. The resultant pressure will in no case move very far from the centre of the base, and consequently the intensity of pressure will never vary greatly between the up-stream and down-stream extremities of the base.

Perhaps one of the most economical uses of reinforced concrete is in the construction of elevated tanks, of which there are many examples in existence. With care and skill in the design these structures may be made quite picturesque features of the landscape, and are in any case less objectionable than



**Reinforced Concrete Grain Elevators: Bin bottoms ready for erection of moving forms, Montreal.** (*See page* 217.)

elevated steel tanks on framed supports. A reinforced concrete tank can be constructed at a cost of from 40 to 50 per cent. that of a tank formed of riveted steel plates, and they will in general be less expensive than tanks of pressed steel or cast-iron plates.

When designing circular reinforced concrete tanks it is, in my opinion, advisable to limit the working resistance of the steel to 12,000 lb. per square inch, since, although the tensile resistance of the concrete is neglected, the elongation of the steel bars must induce elongation in the concrete, and a higher stress in the steel will in all probability cause the concrete to crack. It is also, in my opinion, advisable to insert two series of circular rings in the walls of the tank, one near each surface, in place of one series at the centre of the thickness. One case has occurred to my knowledge, and there may have been others, where the concrete outside the central series of hoops broke away and caused the failure of the structure. It must be remembered that whereas the interior of the tank is kept at a fairly constant state of moisture and temperature the outside is exposed to the variations in temperature and humidity, and consequently the two surfaces are under very different conditions affecting the expansion and contraction of the concrete.

In the construction of reservoirs of this nature the question as to the economy or otherwise resulting from the use of reinforced concrete should receive careful consideration before its employment is decided upon. The method of design, if this material is decided upon, will also require careful consideration. In many cases it is not economical, in my opinion, to use reinforced concrete for the walls or floor, but it is almost universally an economical material for roof construction.

If a considerable portion of the depth is below ground the form of retaining wall construction, with a bottom slab at the back tied to the front slab by ribs, is not an economical form of construction, as the excavations have to be considerably enlarged to accommodate the bottom slab. A wall designed as a cantilever, supported from the floor of the reservoir, will reduce the excavation, but great care is necessary to provide ample support at the bottom to prevent failure between the base of the wall and the floor when the reservoir is empty.

If the reservoir is covered and the covering can be constructed before an excessive loading is brought upon the walls, the roof beams and similar beams formed in the floor can be constructed to support beams along the top and bottom of the wall; which in their turn support the ends of vertical beams between which the walls of the reservoir can be constructed as slabs with horizontal reinforcements.

The covering usually adopted for reservoirs is of the beam and slab type, similar to ordinary floors, and supported by columns, but small circular reservoirs may be covered with a flat dome in a similar manner to that frequently employed for elevated tanks.

Reinforced concrete is a suitable material for elevated aqueducts, a notable example being the aqueduct used to convey water from the Rhone to the Simplon Tunnel works, which was designed and constructed by M. Hennebique and is illustrated in "Reinforced Concrete" by Marsh and Dunn. This aqueduct was nearly two miles long with a fall of 1 in 830 It was of box section about 6 ft. 3 in. by 6 ft. 3 in., and the side walls were about 4 in. thick, the floor about 4 in. at the sides, increasing to about 6 in. at the centre, and the roof about 3½ in. at the sides and 4¾ in. at the centre. The aqueduct was supported on reinforced concrete columns varying from 13 ft. to 19½ ft. in height and placed about 16 ft. 6 in. centre to centre. Expansion joints were left over each support, with a sheet of flexible metal embedded near the outside. These joints were filled in after the first contraction of the concrete.

Open aqueducts built almost entirely above ground-level and those for carrying water over valleys may, with economy, be constructed of reinforced concrete, but for those constructed mainly below ground-level this material will not be so economical for the same reasons as given in the case of reservoirs.

Pipes under small heads, say, up to about 40 ft., may be constructed of reinforced concrete without any special impervious material being embedded in the thickness.

For heads over about 40 ft. some special impervious layer is, in my opinion, necessary. The well-known Bonna pipe is a good example of this type of construction. The impervious layer is formed by a thin sheet steel tube with longitudinal welds formed by the oxy-acetylene or electric processes. This tube is embedded in the thickness of the concrete with the reinforcement outside for smaller heads and inside and outside for greater heads."

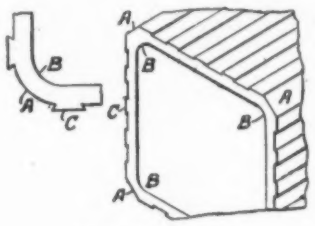
## HOUSES IN NORTHUMBERLAND.

WE illustrate three well-planned houses, designed by Mr. Edward Cratney, which show the increasing influence of axial planning applied to a type of work which has long been distinguished by the absence of symmetry. The house at Stocksfield for Mr. H. Dillon Bennett has been built; the building of the other houses is for the time in abeyance.

## SELECTED PATENT.

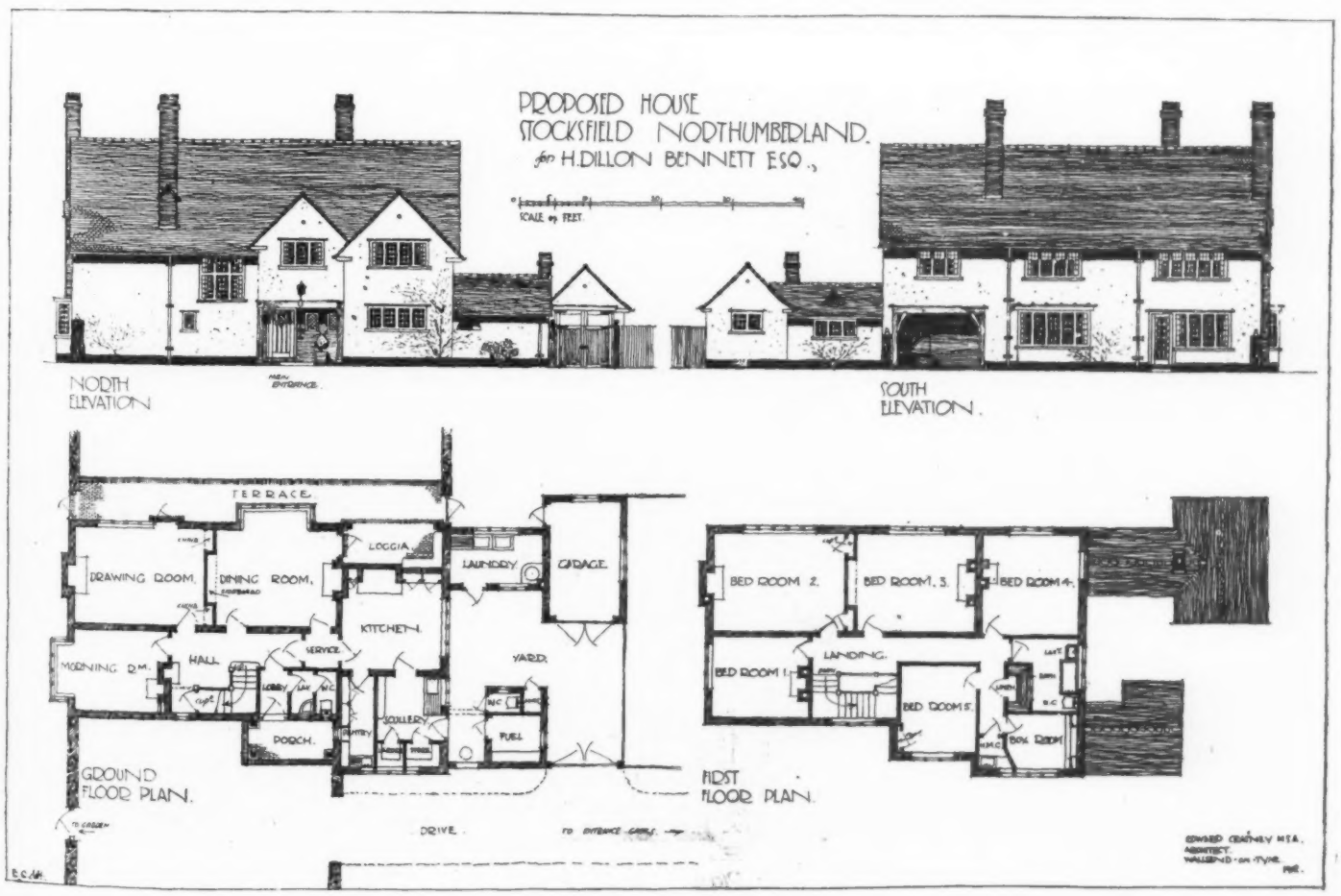
F 20,745 of 1914.—George Leslie Allen: Blocks for floors.

This relates to hollow filling blocks, for concrete and like floors, formed with bevelled corners A to provide an adequate bulk of material at the junctions of the vertical and

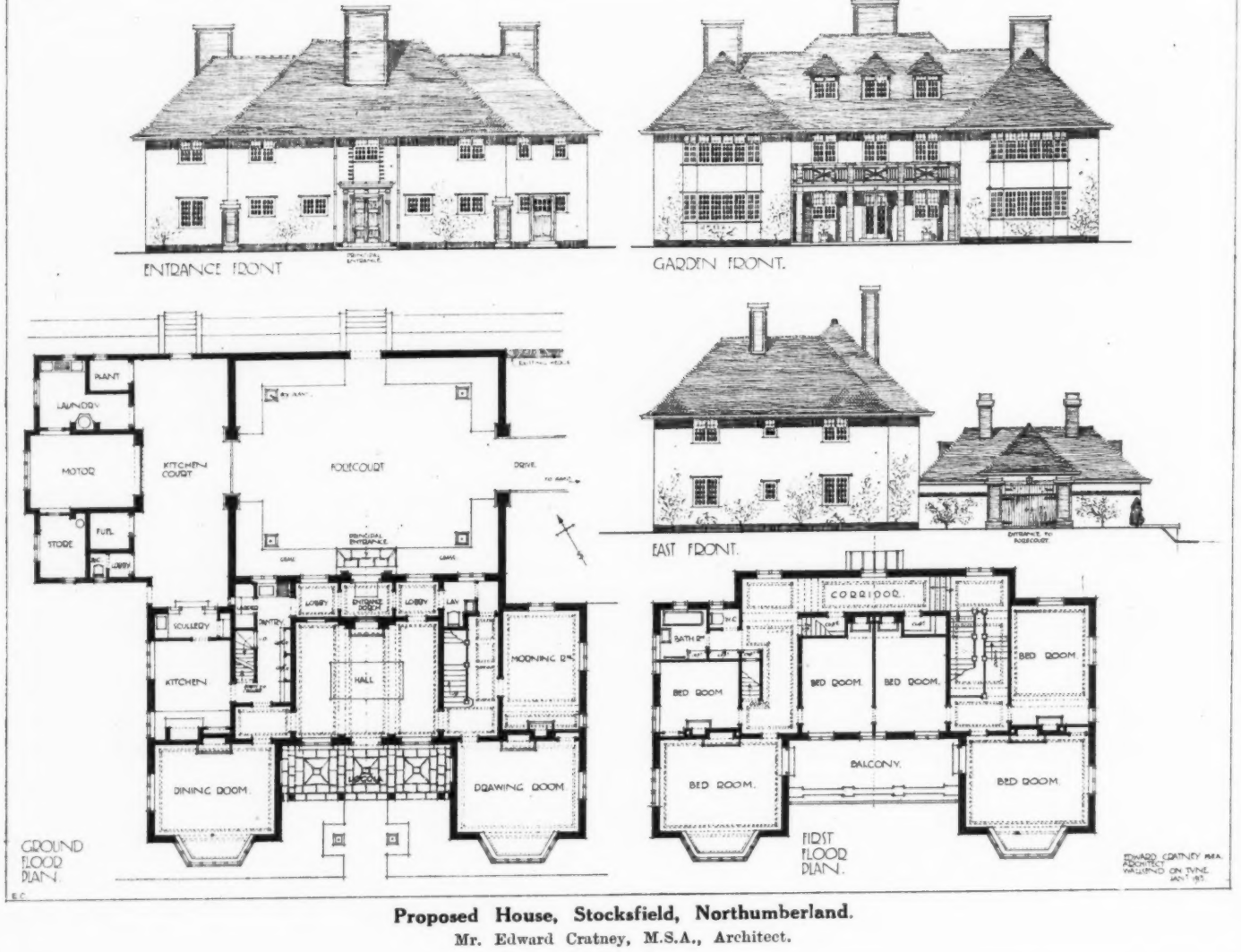



20,745 of 1914.

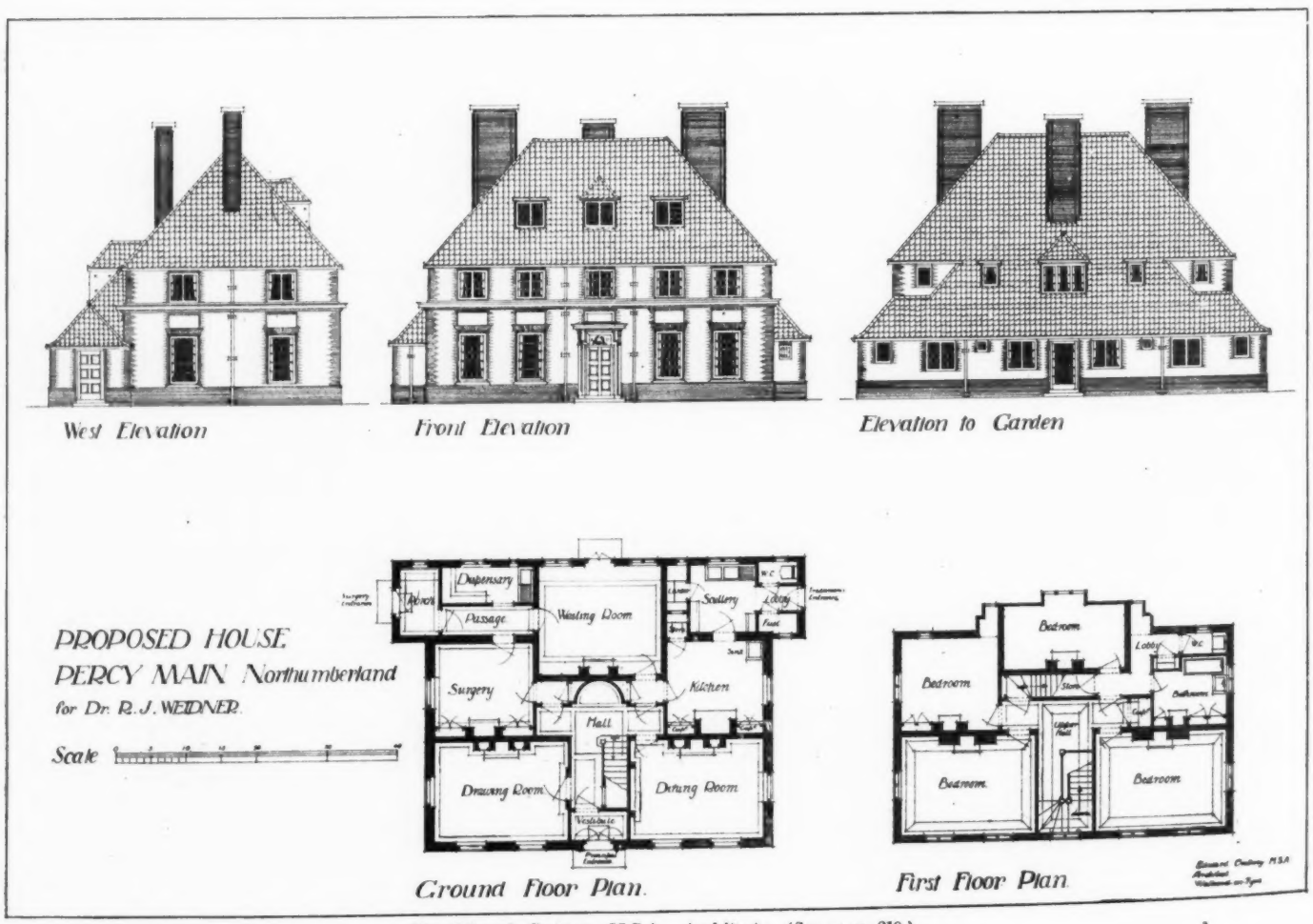
horizontal layers of concrete and also to facilitate the attachment of electric or like fittings. The corners may be straight or rounded, and the interior corners B are curved. The external surfaces of the blocks are formed with longitudinal strips C with undercut edges.




Mr. Edward Cratney, M.S.A., Architect.




**Proposed House, Stocksfield, Northumberland.**
Mr. Edward Cratney, M.S.A., Architect.




Mr. Edward Cratney, M.S.A., Architect. (See page 219.)

# THE BUILDING TRADE.

## LUMP SUM CONTRACTS.

IT is satisfactory to have a decision of the Court of Appeal on a question which must be of everyday occurrence, but the law as to which has to be gleaned from a series of old cases. In the case of Dakin & Co., Ltd., *v.* Lee, in the Law Reports for March, but which was reported some months ago in the *Builder*, the plaintiffs, builders, had undertaken to do certain repairs to the defendant's house for a lump sum, and they were suing for a balance of account. The defendant's contention was that the work had not been completed, and therefore under the lump sum contract nothing was payable. Part of the plaintiff's claim related to additional work and extras, but it is not necessary to consider anything but the lump sum contract, as the appeal related only to the law in connection with that.

The Official Referee had found that the work referred to in the specification had not been carried out in three particulars:—(1) The concrete to be placed under part of a side wall which was to be under-pinned was placed to a depth of 2 ft. instead of 4 ft. It may here be noted that the depth was not stated in the specification, but only in a letter, and the Court of Appeal expressed some doubt as to whether there was in fact an express contract as to this, but the case was treated on this basis; (2) columns to support a bay window were of hollow iron 5 in. in diameter instead of solid iron 4 in. in diameter; (3) the joints over the bay window had not been bolted together as specified, and the concrete was not properly mixed.

It may be said at once that the Court of Appeal considered these omissions to be due to negligence and bad workmanship, probably owing to the carelessness of some workman or the foreman, and not a deliberate omission from the specification. The Divisional Court very carefully reviewed all the authorities, and Mr. Justice Sankey thus summarised the law:—"Where a builder has supplied work and labour for the erection or repair of a house under a lump sum contract, but has departed from the terms of the contract, he is entitled to recover for his services unless (1) the work that he has done has been of no benefit to the owner; (2) the work he has done is entirely different from the work which he has contracted to do; or (3) he has abandoned the work and left it unfinished."

The Court of Appeal affirmed this decision of the Divisional Court, but apparently mainly addressed itself to the point that there had been no abandonment of the contract, and they varied the judgment in one particular; for whereas the court below had arrived at the allowance to be made to the building owner in an informal manner, the Court of Appeal referred the case back to the Referee to ascertain what sum should be allowed in respect of the defective work.

The principle to be applied was laid down in Thornton *v.* Place (1 Moo. & R. 218), a case where work had not been done in accordance with a specification, by Baron Parke as follows:—"When a party engages to do certain work on certain specified terms and in a specified manner, but in fact does not perform the work so as to correspond with the specification, he is, of course, not entitled to recover the price agreed upon in the specification; nor can he recover according to the actual value of the work, as if there had been no special contract; What the plaintiff is entitled to recover is the price agreed upon in the specification subject to a deduction; and the measure of that deduction is the sum which it would take to alter the work so as to make it correspond with the specification."

The Court of Appeal referred the case back to the Official Referee to be dealt with on the principles laid down in this case. We do not think it necessary to detail the cases which were reviewed by the courts, but we may point out that one case which is to be found in the text-books, Ellis *v.* Hamlen (3 Taunt. 52) was overruled as being inconsistent with the other cases and with the principles now laid down.

The reason for the adoption of some such principles in relation to building contracts is easy to explain, for where work has to be done on another man's property it is not like the case of a chattel which can be examined and rejected if it is not made as ordered, but by a gradual process becomes a part of the property and must be accepted in a sense by the owner of the property. Therefore in ordinary cases the first of the tests set out in this case covers the main point to be ascertained, viz., has the building owner derived benefit from the work done?

The second test, however, must qualify this, as the work must be of the nature of that contracted for, for a building owner might be said to derive benefit from work done to his house although it was not of the nature he had contemplated.

In the course of the argument the case was put of a builder who contracts to erect a wall 10 ft. high, but in fact only erected one 2 ft. high. The building owner might be said to derive some benefit in such a case, but Mr. Justice Sankey said that this would come under the third head mentioned, *i.e.*, an abandonment of the contract.

We think that the tests provided in the judgments in this case will be found to provide valuable guides to contractors and those contracting with them, and if careful consideration is given to them they will be found to apply to nearly every case likely to arise in practice.

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## NEW GOVERNMENT CONTRACTS.

### War Office.

*Barrows.*—Baltic Saw Mills Company, Ltd., Goods Station-road, Tunbridge Wells; J. Christopher & Sons, Ltd., St. John's-lane, Clerkenwell, E.C.; C. R. Claridge, Steam Saw Mills, The Basin, Exeter; Colby Bros., Ltd., Oulton Broad, Lowestoft; Cravens, Ltd., Darnall, Sheffield; Cravens Patent, Ltd., 99, Corporation-street, Manchester; Davies & Pryer, Ltd., Collingdon-road, West Dock, Cardiff; F. Davis & Co., Ashford, Kent; Horsfall & Son, Canal Wharf, Luddendenfoot, Yorks; Hoskings Bros., Riverside, Newbury; Lunn Bros., Brockenhurst, Hants; Maldon Iron Works Company, Ltd., Maldon; Newport Ladder and Barrow Company, 4, Caerleon-road, Newport, Mon.; F. Parker & Co., 22, West End-lane, Kilburn; C. R. Pettit & Son, Bridge-street, Thrapston; W. J. Philpott, 131, Waddon New-road, West Croydon; H. C. Slingsby, Preston-street, Bradford; Stableford & Co., Ltd., Coalville, Leicester; J. C. Stephens & Son, 884, Old Kent-road, S.E.; R. Taylor, Church-road, Northwich, Cheshire; Webb, Major, & Co., Ltd., Weymouth-road, Dorchester.

*Cable and Wire, Electric.*—British Insulated and Helsby Cables, Ltd., Helsby, Warrington; I. Frankenburg & Sons, Ltd., Salford, Manchester; Hooper's Telegraph and India Rubber Works, Ltd., 31, Lombard-street, E.C.; Johnson, Matthey, & Co., Ltd., 78, Hatton-garden, E.C.; Johnson & Phillips, Ltd., Charlton, S.E.; Liverpool Electric Cable Company, Linacre-lane, Bootle, Liverpool; St. Helen's Cable and Rubber Company, Ltd., Warrington; Siemens Bros. & Co., Woolwich, S.E.

*Cranes, Steam, and Accessories.*—Dunlop, Bell, & Co., Ltd., 46, Greenland-street, Liverpool; J. Wardell & Co., Westminster-chambers, 3, Victoria-street, S.W.

*Engines, Oil, and Parts.*—Keighley Gas and Oil Engine Company, Ltd., Imperial Works, Keighley; Petters, Ltd., 73, Queen Victoria-street, E.C.

*Glass, Sheet.*—Pilkington Bros., Ltd., St. Helens.

*Paint.*—L. Berger & Sons, Ltd., Homerton, N.E.; Blyth, Heald, & Langdale, Ltd., Oak-road, Newland, Hull; J. S. Craig & Co., Ltd., 97, Portman-street, Glasgow; Indestructible Paint Company, Ltd., Norway Wharf, Commercial-road East, Limehouse, E.; Locke, Lancaster, and W. W. & R. Johnson & Sons, Ltd., 306, Burdett-road, E.; Rowe Bros. & Co., Ltd., Old Quay Lead Works, Runcorn; Rowe Bros., Ltd., City Lead Works, Liverpool; Whiffen & Sons, Ltd., Aldersgate Chemical Works, Southall.

*Roofing, Asphalted.*—R. W. Blackwell & Co., Ltd., Croydon, and 14, Gt. Smith-street, S.W.; Graves & Co., Ltd., Waterford.

*Roofing, Rubber, etc.*—Ruberoid Company, Ltd., Ruberoid Works, Brimsdown, Enfield Highway, N.; F. McNeill & Co., Kirkintilloch, Glasgow, etc.

*Tanks.*—J. Ash & Son, Rea-street South, Birmingham; F. Braby & Co., Ltd., Ashton Gate Works, Bristol, etc.; H. Braithwaite & Co., Ltd., Swinegate, Leeds; Bulpitt & Sons, Ltd., Swansea Works, Birmingham; Burt Bros., Edward-street-parade, Birmingham; J. Chew & Co., Brookhouse, Blackburn; Coventry Motor Fitting Company, Ltd., Far Gosford-street, Coventry; Farringdon Works and H. Pontifex & Sons, Ltd., King's-road, Hay Mills, Birmingham; Fisher & Ludlow, Ltd., Rea-street, Birmingham; F. Francis & Sons, Ltd., Trundley's-road, Deptford, S.E.; G. A. Harvey & Co. (London), Ltd., Woolwich-road, S.E.; W. Hepton & Son, Hunslet-lane, Leeds; Keep & Co., Barn-street, Birmingham; Llewellins & James, Ltd., Castle Green, Bristol; F. W. Lucas, Ltd., 240, Brixton-hill, S.W.; J. Lysaght, Ltd., Bristol; Mann & Spence, Westgate-road, Dartford; Manwood, Miller, & Co., Tame Valley, Dukinfield, Cheshire; Mathews & Timmins, Cambridge-street, Birmingham; Midland Tank & Ironplate Company, 243, Heneage-street, Birmingham; Musgrove & Green, Ltd., 46, Bromsgrove-street, Birmingham; Orme, Evans, & Co., Ltd., Wolverhampton; Parkinson and W. & B. Cowan, Ltd., Fitzalan-street Works, Kennington-road, S.E., and Bell Barn-road Works, Birmingham; G. W. Pearce & Sons, Ltd., Chester-street, Birmingham; T. Piggott & Co., Ltd., Atlas Works, Spring-hill, Birmingham; C. Raine, Cleveland-street, Hull; W. Soutter & Sons, Ltd., Farm-street, Birmingham; J. Truman & Co., Ltd., Smithfield-passage, Birmingham; Walls, Ltd., Fazeley-street, Birmingham.

*Tools.*—Alldays & Onions Pneumatic Engineering Company, Ltd., Birmingham; Bache Bros., Ltd., Stakenbridge, Churchill, Kidderminster; Bell Bros. & Co., Solferino-street, Sheffield; J. Berry, Heath-road, Ditton, Widnes; W. G. Birkinshaw & Co., Reliance Works, Wolverhampton; B. Bladen & Son, Halesowen, Birmingham; T. E. Bladon & Son, 99/105, Northwood-street, Birmingham; J. Blundell & Sons, Ltd., Houghton-street, Prescot, Lancs; S. Briggs & Co., Ltd., Burton-on-Trent; F. J. Brindley & Sons, River-lane, Sheffield; J. Brooks (Lye), Ltd., Brook-street, Lye, Stourbridge; J. Brown, Imperial Works, Halesowen; Burys & Co., Regent & Philadelphia Works, Penistone-road, Sheffield; Chater Lea, Ltd., 74/84, Banner-street, E.C.; C. Churchill & Co., Ltd., 9/15, Leonard-street, Finsbury, E.C.; Douglass Bros., Ltd., Globe Iron Works, Blaydon-on-Tyne; E. Elwell, Ltd., Wednesbury; B. Fiddian & Son, Albion Works, Stourbridge; W. Gilpin, Sen., & Co., Ltd., Churchbridge, Cannock, Staffs; Grimshaw, Baxter, & J. J. Elliott, Ltd., 29/37, Goswell-road, E.C.; Hardy Patent Pick Company, Ltd., Sheffield; J. Hatton, Washing Pool, Stourbridge; H. L. Hawtin, Wisemore, Walsall; F. Herring & Sons, 22½, Cazenove-road, Stoke Newington, N.; W. Hunt & Sons (The Brades), Ltd., Brades Steel Works, near Birmingham; J. Keeves & Sons, Ltd., Boundary-street, Shoreditch, N.E.; Kitson-Empire Lighting Company, Ltd., Albert-road, Stamford; Lawson & Heaton, Ltd., 315, Long-lane, Nechells, Birmingham; Leedham & Heaton, Ltd., Armley-road, Leeds; E. & W. Lucas, Ltd., Dronfield Forge and Shovel Works, Sheffield; Marples & Sons, Ltd., Hibernia Works, Sheffield; A. Mathieson & Sons, Ltd., East Campbell-street, Glasgow; M. Mellor & Sons, Ltd., Lee Works, Arkwright-street, Nottingham; Moore & Wright, Hector Works, Sheffield; J. E. Morrison, 32, Bannon-street, Sheffield; I. Nash & Sons, Ltd., Wollaston Mills, Stourbridge; Patent Stone Dressing Tool Company, Ltd., Wicker-lane, Sheffield; Peacock Bros., 318, Sheffield-road, Tinsley, Sheffield; J. Perks & Sons, Ltd., Monmore Green Works, Wolverhampton; J. Petty

& Sons, 60, Garden-street, Sheffield; J. Potts & Son, Old-hill, Staffs; T. Rowlands & Co., Ltd., North Church-street, Sheffield; J. Shaw & Sons (Wolverhampton), Ltd., Wolverhampton; Sheffield Scissor and Razor Company, Ltd., Clough-road, Sheffield; C. T. Skelton & Co., Ltd., Sheafbank Works, Heeley, Sheffield; Spear & Jackson, Ltd., Aetna Works, Savile-street East, Sheffield; Steel Nut and J. Hampton, Ltd., Wednesbury; Stockton Heath Forge, Warrington; Swindell & Co., Ltd., Withymoor Works, Netherton, Dudley; Thewlis, Griffith. & Edelstein, Ltd., Warrington; C. Thomas & Co., Ltd., Aston Manor, Birmingham; L. Thomas & Co., Coaley, Dursley, Glos.; R. Thomas (Birmingham, 1908), Ltd., Icknield-square, Birmingham; G. Thornton & Co., Ltd., Phœnix Works, Tividale, Tipton; T. Turner & Co., Suffolk Works, Sheffield; J. Tyzack & Son, Ltd., Valley-road, Heeley, Sheffield; S. Vaughan, Ltd., Henry-street, West Bromwich; Ward & Payne, Limbrick Works, Hillsborough; Wardsend Steel Company, Sheffield; Whitecross Bros., Ltd., District Works, Cannock; C. Whitehouse & Sons, Ltd., Cannock; W. Wilkinson & Sons, Warrington-road, Penketh, Warrington; Wilson & Frith, 35, Eldon-street, Sheffield; G. Wolfe & Sons, Ltd., Bathgate; Yardley & Co. (Stourbridge), Ltd., Stamber Mills, Stourbridge; J. Yates & Co., Ltd., Exchange Works, Rocky-lane, Aston, Birmingham.

*Erection of*—Shed at Lincoln: W. Wright & Son (Lincoln), Ltd., Park-street, Lincoln: huts at Crowborough: W. F. Blay, Ltd., Railway House, Cannon-street, E.C.: huts for A.P. Dept. at Woolwich: W. F. Blay, Ltd., Spital-street, Dartford: messing centre at Ashford: H. Knock, New-street, Ashford, Kent: new boiler-house and chimney-shaft at Government laundry, Dublin: Collen Bros., Ltd., East Wall, Dublin; power-house, etc., at Lilbourne: Girdlestone & Co., 13, Davis-street, W.: shelters, etc., for A.P.C. offices at Hounslow: L. Kazak, Railway-place, Belvedere; shelters, etc., at Joyce Green: L. Kazak, Railway-place, Belvedere; shelters, etc., at Potter Heigham: Carter & Wright, Dene-side, Great Yarmouth; institute, etc., at Chatham: Barden & Head, 12, Union-street, Maidstone; steel storage bins at South Farnborough: Estler Bros., South Molton-road, Victoria Docks, E.; buildings at Beverley: T. Obank & Sons, Cyprus Works, Thackley, Bradford: buildings at Cramlington: J. Gerrard & Sons, Ltd., Swinton, Manchester; buildings at Dover: Hampton & Sons, Ltd., 8 and 9, Pall Mall East, S.W.; buildings at Joyce Green: Hampton & Sons, Ltd., 8 and 9, Pall Mall East, S.W.: buildings at Lilbourne: Wm. Moss & Sons, Ltd., Queen's-road, Loughborough; buildings at Rendcomb: W. E. Chivers & Sons, Estcourt-street, Devizes; buildings at Wye: Wm. Harbrow, Ltd., South Bermondsey Station, S.E.; ventilation to men's shelters at Seaford Camp: Peerless, Dennis, & Co., 56, Grove-road, Eastbourne.

## PROPOSED NEW BUILDINGS AND OTHER WORKS.*

**IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.**

Aberdeen.—The Plans Committee of the Aberdeen T.C. has passed the following plans:—Temporary shed, Justice Mill-lane, for the Town and County Motor Garage, per Mr. John Ellis, architect, Stonehaven; alterations on dwelling-house in East North-street, for Mr. R. A. Pressly, dentist, per Messrs. D. and J. R. M'Millan; alterations at factory at junction of North Esplanade West and Russell-road, for Messrs. George Mellis & Son, Ltd., per Mr. George B. Mitchell, architect; dwelling-house, Garthdee-road, for Messrs. Richards, Ltd., per Messrs. Wilson & Walker, architects; shed at Esplanade Saw Mills, North Esplanade West, for Messrs. John Bisset & Sons, Ltd., per Messrs. D. & J. R. M'Millan, architects; office and store, Commercial-road, for the Don Fishing Company, Ltd., per Mr. John Cameron, architect. The Street and Roads Committee of the T.C. has had before it a letter from Messrs. Wilson & Walker, architects, transmitting amended plans of the new warehouse proposed to be erected by Messrs. Richards, Ltd., in Kingsland-place.

Aldershot.—The D.C. has received plans for proposed buildings on a site acquired in the Avenue by the Army and Navy Stores.

Allendale.—The P.C. has approved plans of proposed semi-detached houses and shop to be built on the Allen View Estate.

Barcelona.—The *Gaceta* of February 27 notifies that tenders will be received by the Municipality of Barcelona, within a period of thirty days from that date, for the carrying out of street drainage and sewerage works in that city. The total estimated cost of the works is 131,651 pesetas (about £5,270).

Barrow.—The T.C. has agreed to a proposal of the General Purposes Committee to erect a number of houses for Corporation employees.

Belfast.—The Belfast Harbour Commissioners have accepted the tender of Messrs. H. & J. Martin, Ltd., for the erection of the proposed new shed at the Dufferin Dock.

Birmingham.—The Birmingham Tame and Rea District Drainage Board are making application to the L.G.B. for sanction to a loan of £1,200 for the extension of the Board's electric transmission installation at the sewage farm.

Bournemouth.—The L.G.B. has approved plans of the new pavilion to be erected at Bournemouth by the T.C. The scheme, estimated to cost over £50,000, will not be proceeded with until after the war.

Broadstairs and St. Peters.—The D.C. has approved plans of alterations to the Railway Hotel Stables, for Messrs. Tomson & Wotton.

Burnley.—The Improvement Committee of the T.C. has had before it a plan submitted by Messrs. John Knape & Son, Ltd., for the erection of a garage in Canning-street.

Buxton.—The U.D.C. has approved the following plans:—Addition at rear of Park Lodge; garage for Mrs. C. Swain, "Avenham," College-road; alterations at the Grove Hotel for Messrs. Allsopps, Ltd.

Chile.—Messrs. Gibbs & Co. have been granted permission to construct a wharf at the port of Mejillones for the loading and unloading of nitrate and coal. The *Diario* of December 22 last publishes a law authorising the Chilean Government to contract loans with banks in Santiago up to the amount of 1,500,000 pesos (about £51,500) for the execution of street paving works in that city.

Croydon.—Plans passed by the B.C.:—Mr. W. Darnell, 63, Fernside-road, Balham, fifteen houses, Headcorn-road; Messrs. Paish, Tyler, & Crump, 1, Addiscombe-road, four houses, Addiscombe-road; Mr. H. G. Lumsden, 39, Crowther-road, five houses, Alfred-road.

Dewsbury.—The Electricity and Tramways Committee of the T.C. has accepted a contract for the erection of an engine-room. The National Electric Construction Company are to reinstate the buildings in the Market-place which were wrecked by a runaway tramcar some time ago.

Dundee.—Plans passed by the T.C.:—Brook-street, Broughty Ferry, alterations on dwelling-house for Mr. Robert Baxter; Byron-street, stables and temporary store for Messrs. Francis Stevenson & Sons; Meadow-street, alterations on and additions to offices for Messrs. Samson & Unna; South Baffin-street, store for Messrs. A. G. Kidd & Son, Ltd.; new streets, Maule-street and Navarre-street, Barnhill, extension of for the Earl of Dalhousie.

Dunfermline.—The Dunfermline Dean of Guild Court has passed plans by the Scottish National Council of the Y.M.C.A. for the extension of the Rosyth Hut. The extension is to consist of dressing and bathroom accommodation, hairdressing saloon, and lavatory provision.

Elgin.—Plans passed by the T.C.:—Motor garage proposed to be erected by Mr. Donald Mustard in Duff-avenue, and alterations of shop front proposed to be carried out by Miss Hay at 21, South-street.

Fylde.—Plans passed by the R.D.C.:—Mr. Popplestone, two houses, St. Anne's-road, Marton; Mr. W. Rigby, house and farm buildings at Higher-road, Freckleton; Fylde Industrial Co-operative Society, boiler house, Weeton-road, Wes am, Mr. John Kirkham; stable and piggeries, Bryning-lane, Wrea Green, Mr. A. Jackson; stable and piggeries, Preston Old-road, Marton.

Glasgow.—The Savoy Theatre, Glasgow, recently bought up by the Bicolor Syndicate, of London, is to be remodelled and made into a picture house. At a meeting of the Glasgow School Board it was moved that immediate steps be taken to provide classes for children of school age having defective sight and myopia, the school to be as centrally situated as possible. It was agreed to remit the motion to the joint consideration of the Special Schools and Medical Inspection Committees. The Shipowners' and Dock Labour Employers' Organisation has agreed to provide a dry canteen at Prince's Dock and one at Rothesay Dock.

Grantham.—The T.C. has approved plans of new workshop at Earlesfield Works, for Messrs. A. & J. Shaw, and additions to Nos. 29, 30, and 31, Manners-street, for Mr. T. M. Lawson.

Hammersmith.—The B.G. have been considering the question of structural alterations at the Infirmary.

Hartlepool.—The T.C. has approved the following plans:—Mr. J. T. Graham, rebuilding house, Victoria-place; Mr. R. Hopper, conversion of Ocean House, Moor-terrace, into two dwelling-houses.

Haywood.—The T.C. has passed the following plan:—Messrs. Wm. Wild, Ltd., new mill, Millers' Brook, Miller-street.

Lucan.—A fund is being raised to carry out extensions and repairs to the convent premises.

Marsden.—The D.C. has passed plans for alterations at the Marsden Picture Palace.

Nelson.—The T.C. has approved the following plans:—For the Bridge Mill Company, Ltd., heald and reed store, Bridge Mill; for Mr. G. Aspin, bedroom, storeroom, etc., 7, Hendon-road.

Newhaven.—At a recent meeting of the R.D.C. the Surveyor submitted plans for the erection of an estate office at New Anzac-on-Sea, and these were passed. An estimate was received from Mr. Petitt, of Rottingdean, of £18, for demolishing and clearing away Cliffe House, Rottingdean. This was accepted.

Otley.—The L.G.B. held an inquiry into the town-planning scheme of the Otley District Council.

Ramsgate.—The T.C. has approved plans for the erection of a bungalow in Pysons-road, owner, Mr. G. Griggs; and for the erection of a private garage at Mr. Bryant's, in Shaftesbury-street.

Rowley Regis.—It is proposed to convert the premises lately occupied by the Cable Accessories Company, Ltd., at Britannia-street, Tividale, into a glue factory.

Selby.—The R.D.C. has appointed a committee to consider a town-planning scheme.

Spain.—A new road will shortly be constructed, crossing the Sierra Nevada at an altitude of nearly 10,000 ft., and descending into the Alpujarras district. The Government has granted 2,000,000 pesetas (about £80,000) for this undertaking.

Stevenage.—Plans passed by the U.D.C.:—Plans submitted by Messrs. Shrouder & Matthews of proposed extension of drainage at 29, Trinity-road, belonging to the Misses Blow; proposed additional room at Sishes for Mr. Julius Bertram; plan submitted by Messrs. W. Austin & Sons of proposed alterations at the Coach and Horses public-house, belonging to Messrs. E. K. & H. Fordham, Ltd.

Stokesley.—The R.D.C. has approved plans for the conversion of the old Bethel Chapel at Stokesley into a farmhouse, and for a stone warehouse at Great Ayton for Messrs. Dixon Bros.

Strood.—The Rochester T.C. has decided to purchase land at Steele-street, Strood, for the erection of workmen's dwellings to take the place of those recently demolished in other parts of the city.

Stroud.—The U.D.C. has approved a plan presented by Mr. A. W. England for a corrugated-iron building at the back of his premises in Lower-street.

West Lancashire.—The West Lancashire Council has approved the following plans:—Proposed wash-house, Titmouse Brow, Hesketh Bank, for Mr. T. Butcher; proposed extension of premises in Coal Pit-lane, Bickerstaffe.

Wigan.—The T.C. has resolved to approach the L.G.B. with a view to their sanction being obtained to the immediate erection of part of the houses contained in the Melverley-street scheme, and that the Town Clerk be authorised to make application for a grant towards the cost of erecting the houses in Melverley-street and Coop-street.

Wokingham.—The T.C. has received plans for enlargement of the building belonging to Mr. A. J. Priest at the corner of Langborough-road and Luckley-path.

* See also our list of Competitions, Contracts, etc., on page 224.

## GENERAL BUILDING NEWS.

### MORLEY-ROAD UNITED METHODIST CHURCH AND SCHOOLS, DONCASTER.

The opening ceremony of this new church took place on the 2nd inst. Externally the building is faced with red bricks with Bath stone dressings. The seating, etc., is of oak, and accommodation is provided for about 520 persons, with provision for a future end gallery. The school section is deferred for the present. The contract, for £3,715, has been carried out by Messrs. Pattinson & Son, of Ruskington, near Sleaford, from the designs and under the supervision of Messrs. George Baines & Son, architects, 5, Clement's Inn, Strand, London, and Leeds.

### TRADE NEWS.

The Bedford Union Infirmary is being supplied with Shorland's double-fronted warm air ventilating patent Manchester hospital stoves by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

The "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the General Office and Card Department of the London General Omnibus Company, Ltd., Walthamstow.

We are informed that Messrs. Pither & Son's new premises, 34, 36, and 38, Mortimer-street, have been built in glazed terra-cotta with a turquoise-blue enamelled brick background. The premises are expected to be fully completed in two months.

## NEW COMPANIES.

THE undermentioned particulars of new companies recently registered are taken from the Daily Register compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, Chancery-lane, W.C. :—

SCOTT, KIRK, & Co., LTD. (143,081), Montgomery Works, Rockingham-street, Sheffield. Registered February 21. To carry on business of general, electrical, and mechanical engineers, machinists, hammer and tool manufacturers, ironfounders, steel and munition makers, light, power, and heat producers, builders' haulage and removal contractors, dealers in bricks, tiles, etc., gas engineers, etc. Nominal capital, £1,000 in 1,000 £1 shares.

WILLIAM SHEPHERD & SONS, LTD. (143,085), Milkstone, Rochdale. Registered February 21. To acquire, take over, and carry on business of roads and public works contractors, asphalters, and concreters, wood and stone, macadam, and tar paviors, tilers, road and pavement makers, drainage contractors, lime and stone merchants and landscape gardeners, mortar and building materials of all kinds, ironmasters and founders, engineers, electricians, dock owners, wharfingers, etc. Nominal capital, £5,000 in 1,000 £5 shares.

ANTILL, LTD. (143,103), 2A, Christchurch-avenue, Brondesbury, N.W. Registered February 24. To carry on business of builders and contractors, decorators, merchants, dealers in sand, lime, stone, bricks, timber, hardware, and other builders' requisites, brick, tile, and terra-cotta makers, house and estate agents, gas, water, and electrical engineers, etc. Nominal capital, £1,000 in 1,000 £1 shares.

BRITISH PUMICE, LTD. (143,117). Registered February 25. To carry on business of manufacturers of artificial pumice, chemical earthenware, silica, flint, stone, and glaze grinders, crate and case manufacturers, cement makers, brick, tile, and pipe workers, joinery manufacturers, kiln proprietors and quarry owners, dealers in hardware, etc. Nominal capital, £2,500 in 2,450 £1 "A" shares and 1,000 1s. "B" shares.

T. MANNERS & SONS, LTD. (143,125). Registered February 25. To acquire, take over, and carry on business of joiner, builder, timber merchant, builders' merchants, and general contractors now carried on by T. Manners, at Bishop Auckland, dealers in slates, stone, lime, cement, and builders' materials of all kinds for the execution of buildings, etc. Nominal capital, £3,000 in 3,000 £1 shares.

MOORE'S TRANSPORTS, LTD. (143,134). Registered February 26. To acquire, take over, and carry on business of cartage contractor, now carried on as Joseph Moore, at London and elsewhere, forwarding, railway, and shipping agents, carriers, freight contractors, lightermen, wharfingers, colliery and quarry owners, builders, timber merchants, etc. Nominal capital, £2,870 in 2,870 £1 Ordinary shares.

WRIGHTS' (COLCHESTER), LTD. (143,146). Registered February 28. To acquire, take over, and carry on business of coal and general builders, merchants, and cartage contractors now carried on at Hythe Quay, Colchester, and elsewhere, as Frank Wright, carriers by road, rail, etc., haulage contractors, dealers in sand, tiles, pipes, pottery, etc., and manufacturers of same. Nominal capital, £5,000 in 5,000 £1 shares.

HARRY SCHUMAN, LTD. (143,159), 41, Featherstone-street, E.C. Registered March 1. To carry on business as furniture merchants and factors, cabinet makers, timber merchants, builders, contractors, engineers, exporters, importers of furniture, timber and other commodities, carriers, warehousemen, etc. Nominal capital, £500 in 500 £1 shares.

W. ALBAN RICHARDS & CO., LTD. (143,165). Registered March 1. To build, construct, equip, control in the United Kingdom and elsewhere public and private works, buildings, and conveniences of all kinds and carry on business of builders and contractors, decorators, merchants and dealers in sand, stone, lime, bricks, timber and hardware, and other building requisites, tile, lime, and terra-cotta makers. Nominal capital, £80,000 in 75,000 £1 Preference shares and 100,000 1s. Ordinary shares.

## RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

| —— | Masons. | Bricklayers. | Carpenters, Joiners. | Plasterers. | Slaters. | Plumbers. | Painters. | Masons' Labourers. | Bricklayers' Labourers. | Plasterers' Labourers. |
|---|---|---|---|---|---|---|---|---|---|---|
| | d. | d. | d. | d. | d. | d. | d. | d. | d. | d. |
| Aberdare | 9 | — | 9½ | 9½ | — | 9 | 8 | 6½ | 6½ | 6½ |
| Accrington | 10 | 10 | 9½ | 9½ | 9 | 9 | 9½ | 6½ | 6½ | 6½ |
| Altrincham | 9½ | 10 | 10½ | 10 | 8½ | 10 | 9 | 6½ | 7½ | 7 |
| Ashton-under-Lyne | 11 | 11 | 10 | 10½ | 9 | 10 | 9 | 6½ | 6½ | 7½ |
| Barnsley | 9½ | 9½ | 9½ | 9½ | 9 | 9½ | 8½ | 7½ | 7½ | 7½ |
| Barrow-in-Furness. | 9½ | 10 | 9½ | 9½ | 9½ | 9½ | 9½ | 7 | 7 | 7 |
| Barry | 9½ | 9½ | 9½ | 10 | — | 9 | 8½ | 6½ | 6½ | 6½ |
| Bath | 8½ | 8½ | 8½ | 8 | 7½ | 8 | 7½ | 6 | 6 | 6 |
| Bedford | 8 | 8 | 8 | 8½ | 8 | 9 | 6½ | 5½ | 5½ | 6 |
| Birkenhead | 11 | 11 | 11 | 11½ | 11 | 11 | 9½ | 7 | 7 | 7 |
| Birmingham | 11½ | 11½ | 11½ | 11½ | 10½ | 11½ | 9½ | 8½ | 8½ | 8½ |
| Bishop Auckland | 9 | 9 | 9 | 9 | 10 | 9 | 7½ | 6 | 6 | 6½ |
| Blackburn | 10 | 10½ | 10 | 10 | 9½ | 10 | 9½ | 6½ | 7½ | 7½ |
| Blackpool | 10½ | 9½ | 9½ | 9½ | 8½ | 9½ | 8½ | 6 | 6 | 6 |
| Bolton | 10 | 10½ | 10 | 10½ | 10 | 10 | 9½ | 6–7 | 7 | 7 |
| Bournemouth | 8½ | 9 | 9 | 9 | 8½ | 9 | 8½ | 6½ | 6½ | 6½ |
| Bradford | 10 | 10 | 9½ | 9½ | 10 | 10 | 8½ | 7½ | 7½ | 7½ |
| Bridgwater | 6½ | 6½ | 6½ | 6½ | 6½ | 6½ | 6 | 4 | 4 | 4 |
| Brighton | 9 | 8½ | 8½ | 8½ | — | 8 | 7 | 6 | 6 | 6 |
| Bristol | 10½ | 10½ | 10½ | 10½ | — | 10½ | 9½ | 8 | 8 | 8 |
| Burnley | 10 | 10½ | 9½ | 9½ | 8 | 9½ | 9½ | 7 | 7 | 7½ |
| Burton-on-Trent | 9 | 9 | 9 | 9½ | 9 | 9 | 8½ | 6½ | 6½ | 6½ |
| Bury | 11 | 11 | 10 | 9 | 9½ | 10 | 9 | 7 | 7½ | 7½ |
| Cambridge | 9½ | 9 | 9 | 9½ | 9½ | 9½ | 7½ | 6 | 6 | 6 |
| Canterbury | 8½ | 8 | 8 | 10 | — | 8½–9 | 7 | 5 | 5 | 5 |
| Cardiff | 10½ | 10½ | 10½ | 10½ | 10½ | 10½ | 9½ | 7½ | 7½ | 7½ |
| Chatham | 8 | 9 | 9 | 9 | 9 | 9 | 7½ | 6 | 6 | 6 |
| Chelmsford | 8 | 7½ | 8½ | 8 | — | 7½ | 6½ | 5 | 5 | 6½ |
| Cheltenham | 8½ | 8½ | 8½ | 8½ | — | 8½ | 8½ | 6 | 6 | 6 |
| Chester | 9½ | 10 | 10 | 9½ | 9½ | 9½ | 8½ | 6½ | 7 | 6½ |
| Chesterfield | 9 | 9 | 9 | 8 | 9 | 8½ | 8½ | 5½ | 5½ | 5½ |
| Colchester | 8 | 8½ | 8½ | 9 | 8 | 9 | 6 | 5½ | 5½ | 5½ |
| Coventry | 10½ | 10½ | 10½ | 10½ | 9½ | 10½ | 9½ | 7½ | 7½ | 7½ |
| Crewe | 7½ | 8 | 7½ | 9 | 8½ | 8 | 7½ | 5½ | 5½ | 6 |
| Darlington | 9½ | 10 | 10 | 10½ | 10 | 9½ | 8½ | 7 | 7 | 7 |
| Derby | 9½ | 9½ | 9 | 9 | 9 | 9 | 8 | 6½ | 6½ | 7 |
| Doncaster | 9½ | 9½ | 9 | 9½ | 9½ | 9 | 8 | 6½ | 6½ | 7½ |
| Dudley | 8½ | 8½ | 8½ | 8½ | 8½ | 8 | 7½ | 6½ | 6½ | 6½ |
| Durham | 9 | 9 | 9½ | 9 | 10 | 9 | 8½ | 6 | 6 | 6½ |
| East Glam. and Mon. Valleys | 10 | 10 | 10 | 10 | — | — | 9 | 7 | 7 | 7 |
| Exeter | 8 | 8½ | 8 | 8½ | 7½ | 7½ | 7 | 5½ | 5½ | 5½ |
| Folkestone | 8½ | 8½ | 8½ | 9 | 8½ | 8½ | 7–7½ | 6½ | 6½ | 6½ |
| Gloucester | 8 | 8½ | 8½ | 8 | 8 | 8½ | 8 | 5½ | 5½ | 5½ |
| Grantham | 8 | 8 | 7½ | 7½–8 | 7½–8 | 7 | 6½ | 5 | 5 | 5 |
| Grays | — | 10 | 10 | — | — | 9½ | 8½ | 7 | 7 | 7 |
| Grimsby | 9 | 9 | 9 | 9½ | 9 | 9 | 8½ | 7 | 7 | 8 |
| Great Yarmouth | 8 | 8 | 8 | — | 8 | 8 | 6½ | 5 | 5 | — |
| Halifax | 10 | 10 | 9½ | 9 | 9 | 9 | 8½ | 7 | 7 | 7 |
| Harrogate | 9½ | 9½ | 9 | 9 | 8 | 9½ | 8½ | 6½ | 6½ | 6½ |
| Hartlepools | 10 | 10½ | 10½* | 10½ | 10 | 10 | 9 | 7½ | 7 | 8 |
| Hastings | 8½ | 8 | 8 | 8½ | 8 | 8 | 7 | 6½ | 5½ | 6½ |
| Hereford | 8 | 8 | 7½ | 8½ | 8 | 7 | 7 | 5½ | 5½ | 5½ |
| Huddersfield | 11 | 11 | 9½ | 9½ | 10 | 9 | 8½ | 7½ | 7½ | 7½ |
| Hull | 10½ | 10 | 10 | 10 | 10 | 10 | 9 | 8 | 8 | 8 |
| Ipswich | 8½ | 8½ | 8½ | 9 | 9 | 8½ | 7 | 5½ | 5½ | 5½ |
| Lancaster | 10 | 10 | 9 | 9 | 9 | 9 | 9 | 6 | 6 | 6½ |
| Leamington Spa | 9 | 9 | 9 | 8½ | 9 | 9 | 8 | 6 | 6 | 6 |
| Leeds | 10½ | 10½ | 10½ | 10½ | 10 | 10 | 8½ | 7½ | 7½ | 8 |
| Leicester | 10½ | 10 | 10½ | 10½ | 11 | 10 | 9 | 7½ | 7½ | 8 |
| Lincoln | 9 | 8½ | 8½ | 9 | 8½ | 8½ | 8 | 6 | 5½ | 6½ |
| Liverpool | 11 | 11 | 11 | 11 | 10½ | 11 | 9½ | 7 | 7 | 7 |
| Llanelly | 9½ | 9½ | 9½ | 8½ | 9 | 8½ | 8 | 5½ | 5½ | 5½ |
| London | 11½ | 11½ | 11½ | 11½ | — | 1s. | 9 | 8 | 8 | 8 |
| Loughborough | 9 | 8½ | 8½ | 9 | 9 | 8½ | 7½ | 5½ | 5½ | 6½ |
| Luton | 9½ | 9 | 9 | 8½ | 9 | 8½ | 7½ | 6½ | 6½ | 6½ |
| Maidstone | 9 | 9 | 9 | 9 | 9 | 9 | 8 | 6 | 6 | 6 |
| Manchester | 11 | 11 | 11 | 11 | 10 | 11 | 9½ | 7½ | 7½ | 7½ |
| Mansfield | 8½ | 9 | 8½ | 8½ | — | 8½ | 8 | 6 | 6 | — |
| Merthyr Tydfil | 9½ | 9½ | 9½ | 9½ | 8½ | 9 | 8 | 6½ | 6½ | 6½ |
| Middlesbrough | 10 | 10½ | 10½ | 10½ | 10 | 10 | 8½ | 7½ | 7½ | 8½ |
| Newcastle-on-Tyne | 11 | 11 | 11 | 11 | 10 | 10 | 9½ | 7½ | 7½ | 7½ |
| Newport, Mon. | 10 | 10 | 10 | 10 | 8½ | 10 | 9 | 7 | 7 | 7 |
| Northampton | 9 | 9 | 9 | 9 | 8½ | 9 | 8 | 6 | 6 | 6 |
| Norwich | 8½ | 8½ | 8½ | 8½ | 8 | 8½ | 7½ | 6 | 6 | 6 |
| Nottingham | 10½ | 10½ | 10½ | 10½ | 9½ | 10½ | 9 | 8 | 8 | 8½ |
| Oldham | 10½ | 10½ | 10½ | 10 | 9 | 10 | 9½ | 7 | 7 | 7½ |
| Oxford | 9½ | 9 | 9 | 9 | 8 | 9 | 8 | 6½ | 6½ | 6½ |
| Plymouth | 9* | 9* | 9* | 9* | 9 | 9* | 8 | 6½* | 6½* | 6½* |
| Pontypridd | 9½ | 9 | 9 | 9½ | 9 | 9 | 8 | 6½ | 6½ | 6½ |
| Portsmouth | 9½ | 9½ | 9½ | 9½ | — | 8½ | 7½ | 7 | 7 | 7 |
| Preston | 10½ | 10½ | 10 | 9½ | 9½ | 10 | 9½ | 6 | 7 | 7½ |
| Reading | 8½ | 9 | 9 | 9½ | — | 9 | 7½ | 6 | 6 | 6 |
| Rochdale | 10½ | 10½ | 10 | 10 | 8½ | 10 | 9 | 7 | 7 | 7½ |
| Rochester | 8 | 9 | 9 | 9 | 9 | 8½ | 7½ | 6 | 6 | 6 |
| Rugby | 9½ | 9½ | 9½ | 9½ | 8 | 9½ | 8½ | 6 | 6 | 6 |
| St. Albans | 9 | 9 | 9 | 9–10 | 9 | 9–10 | 8 | 6½ | 6 | 6½ |
| St. Helens | 9 | 9½ | 10 | 9½ | 9½ | 9½ | 9½ | 6 | 6½ | 6 |
| Scarborough | 9 | 9½ | 9 | 8½ | 8 | 9 | 8 | 7 | 7 | 7 |
| Sheffield | 10½ | 9½† | 10½ | 9½ | 10 | 10 | 9 | 7½ | 7½ | 7½ |
| Shrewsbury | 8½ | 8½ | 8½ | 9½ | — | 8½ | 7 | 5½ | 5½ | 5½ |
| Southampton | 8½ | 9½ | 9½ | 8½ | — | 9½ | 8½ | 6½ | 6½ | 6½ |
| Southend-on-Sea | 9 | 9 | 9 | 9 | P'cework | 9 | 7 | 6 | 6 | 6 |
| Southport | 10 | 10 | 9½ | 9½ | 9½ | 9½ | 9½ | 6½ | 7 | 7 |
| South Shields | 11 | 11 | 11 | 11 | 10 | 8½ | 9½ | 7½ | 7½ | 7½ |
| Stockport | 11 | 10½ | 10½ | 10½ | 9½ | 10 | 9½ | 6½ | 7 | 7½ |
| Stockton-on-Tees | 10 | 10½ | 10½ | 10½ | 10 | 10 | 9 | 7½ | 7½ | 8 |
| Stoke-on-Trent | 9 | 9½ | 9 | 9 | — | 8½ | 8½ | 6 | 6 | — |
| Stroud | 7½ | 7½ | 7½ | 7½ | 7½ | 7½ | 7 | 5 | 5 | 5 |
| Sunderland | 11 | 11 | 11 | 10½ | 10 | 9 | 9½ | 7½ | 7½ | 7½ |
| Swansea | 9½ | 9½ | 9½ | 9½ | 8½ | 9 | 9 | 6½ | 6½ | 6½ |
| Taunton | 7 | 7 | 7 | 7 | — | 6 | 6½ | 4½ | 4½ | 4½ |
| Torquay | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 6 | 6 | 6 |
| Wakefield | 9½ | 9½ | 9 | 9½ | 8½ | 9 | 8 | 7 | 7 | 7 |
| Walsall | 9½ | 9 | 9 | 9 | 8½ | 10 | 8 | 6½ | 6½ | 6½ |
| Warrington | 8½ | 10½ | 10½ | 10½ | 8½ | 10½ | 9½ | 6½ | 6½ | 6½ |
| West Bromwich | 10 | 10 | 10 | 10½ | — | 9 | 8 | 7 | 7 | 7 |
| Wigan | 10 | 10½ | 9½ | 9½ | 9 | 9½ | 9½ | 7 | 7 | 7 |
| Windsor | 9 | 9 | 9 | 10 | — | 9 | — | 6 | 6 | 6 |
| Wolverhampton | 9½ | 9½ | 9½ | 10 | 8 | 10 | 8 | 6½ | 6 | 6½ |
| Worcester | 8½ | 9 | 9 | 9 | 9 | 9 | 7½ | 6 | 6 | 6 |
| York | 9½ | 9½ | 9 | 9½ | 9½ | 9 | 8½ | 7 | 7 | 7 |

The mason's rate given is for bankers; fixers usually ½d. per hour extra.

* War bonus of 2s. per week granted. † War bonus of 3s. per week granted.

# List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number:** Competitions, —; Contracts, iv.; Public Appointments, —; Auction Sales, xx. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

## Contracts.

### BUILDING AND PAINTING.

*The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.*

MARCH 18. — **Dundee.** — DEMOLITION, ETC. — Demolition of old school buildings adjoining Wallacetown Public School, Dundee, and the removal of all material and debris arising therefrom, for the Dundee School Board. Conditions of contract, etc., of Mr. John E. Williams, Clerk of the Board, School Board Offices.

MARCH 18.—**Wallasey.**—ROOF.—For a small lean-to roof at the Generating Station, Limekiln-lane, Wallasey, for the Electricity Committee. Drawings, etc., at the Electrical Engineers' Office, Seaview-road, Liscard, Wallasey.

MARCH 21.—**Bradford.**—SHEDS.—The Corporation invite tenders for the following:—St. James's Market, temporary store sheds; Bolton-lane Abattoirs, temporary store sheds. General conditions of contract, etc., of the City Architect, Town Hall, Bradford.

MARCH 21.—**Manchester.**—CUBICLES.—For the erection of cubicles for nurses at the Withington Institution, Nell-lane, West Didsbury, near Manchester, for the B.G. Particulars of the Master at the Institution.

MARCH 21.—**Taunton.**—SHOP FRONT, ETC.—For new shop front and other alterations at No. 28, East-street, Taunton, for the Committee of Management of the Taunton Co-operative and Industrial Society, Ltd. Plans, etc., of Mr. F. W. Roberts, F.R.I.B.A., architect, 2, Hammet-street, Taunton.

MARCH 23.—**Aspatria.**—ADDITIONS.—Additions to the butcher's department of the Aspatria Industrial Co-operative Society, Ltd. Plans, etc., of Messrs. W. G. Scott & Co., architects and surveyors, Workington.

MARCH 23.—**Hunslet.**—BRICKLAYERS' WORK, ETC.—For bricklayers', joiners', plumbers', and ironmongers' work for three months for the B.G. Tender forms of Mr. Fred. M. Mee, Clerk to the Guardians, Union Offices, Glasshouse-street, Hunslet, Leeds.

* APRIL 1.—**Hayes.**—FIFTY-TWO WORKMEN'S DWELLINGS.—The Hayes U.D.C. invite tenders for erection of fifty-two workmen's dwellings.

NO DATE. — **Barry.** — COTTAGES.—The Barry Railway Company invite tenders for the erection of a pair of cottages at Southerndown-road station. Plans, etc., at the Engineer's Office, Barry Dock.

NO DATE.—**Harrogate.**—ADDITIONS, ETC.—For additions and alterations to the house, and the erection of new garage, at "The Old Parsonage," High Harrogate, for Mrs. A. Lawson. Names to the architects, Messrs. Bown & Crosland, 6, Princes-square, Harrogate.

NO DATE. — **Ripon.**—ALTERATIONS, ETC.—For proposed alterations and additions to "The Saracen's Head Hotel," North-street, Ripon, for Messrs. Hepworth & Co., Ltd. Messrs. Bland & Bown, F.R.I.B.A., architect, Harrogate.

### FURNITURE, MATERIALS, etc.

MARCH 17. — **Cardiff.**—MATERIALS.—Supply to the Guardians of Cardiff Union of building materials and ironmongery, glass and glazing steam fittings. Forms of tender of Mr. Arthur J. Harris, Clerk, Union Offices, Queen's-chambers, Cardiff.

MARCH 17.—**Felixstowe.**—CEMENT, ETC.—Supply to the U.D.C. of asphalt, Portland cement, timber, etc. Specifications, etc., of Mr. H. Clegg, A.M.Inst.C.E., Engineer and Surveyor to the Council, Town Hall, Felixstowe.

MARCH 17.—**Hartlepool.**—OILS, PAINTS, ETC.—Supply to the Guardians for three months of oils, paints, varnishes, etc. Forms of tender, etc., of Mr. N. Jeffries, Clerk, Guardians' Office, Hart-road, West Hartlepool.

MARCH 18.—**Dudley.**—MATERIALS.—Supply to the Corporation of builders' materials for twelve months. Forms of tender, etc., of Mr. John Gammage, Borough Engineer and Surveyor, Borough Surveyor's Office, Town Hall, Dudley.

MARCH 20.—**London.**—PAINTS AND OILS.—Supply to the Guardians of Wandsworth Union, for a period of six months, of paints and oils, etc. Forms of tender of Mr. F. J. Curtis, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.

MARCH 20.—**Sutton Coldfield.**—MATERIALS.—Supply to the Corporation of builders' materials during the year ending March 31, 1917. Forms of tender, etc., of Mr. W. A. H. Clarry, Borough Engineer and Surveyor, The Council House, Sutton Coldfield.

MARCH 21.—**Brighton.**—MATERIALS.—Supply to the Guardians of painters', glaziers', and plumbers' materials. Forms of tender, etc., at the Guardians' Clerk's Office, Princes-street.

MARCH 21.—**Mitcham.**—MATERIALS.—Supply to the U.D.C. of builders' materials for the year ending March 31, 1917. Specifications, etc., at the Council Offices, Vestry Hall, Mitcham.

MARCH 22. — **Twickenham.** — MATERIALS. — Supply to the U.D.C. of builders' materials for one year. Forms of tender, etc., of Mr. Fred. W. Pearce, F.S.I., Surveyor to the Council, Town Hall, Twickenham.

MARCH 23.—**Cardiff.**—MATERIALS.—Supply to the Welsh Metropolitan War Hospital, Whitchurch, near Cardiff, of builders' materials. Forms of tender, etc., of Mr. T. D. Morgan, Clerk and Steward, War Hospital, Whitchurch, near Cardiff.

MARCH 23.—**Ogmore and Garw.**—MATERIALS.—Supply to the U.D.C. of builders' materials, etc. Forms of tender from Mr. W. T. Ollivant Jones, Engineer and Surveyor, Council Offices, Brynemnyn, Glam.

MARCH 23.—**Prescot.**—MATERIALS.—Supply to the Guardians of builders' materials for three or six months. Tender forms of Mr. A. F. Mann, Clerk to the Guardians, Union Offices, Whiston, Prescot.

MARCH 23. — **South Stoneham.** — CEMENT.—Supply to the B.G., from April 1, 1916, to June 30, 1916, of Portland cement, etc. Forms of tender, etc., of Mr. E. Wynter Cross, Clerk, the Workhouse, Westend, near Southampton.

### ENGINEERING, IRON, AND STEEL.

MARCH 20.—**Foleshill.**—BACTERIA BEDS.—Construction of two circular bacteria beds with revolving distributors at the Sewage Works, Henley Mill, Foleshill, for the R.D.C. Plans, etc., of Mr. A. E. Newey, Engineer and Surveyor, Council Offices, Foleshill, near Coventry. Deposit, £2 2s.

MARCH 22. — **Manchester.**—SWITCHGEAR.—The Electricity Committee of the Manchester Corporation invite tenders for the supply, delivery, and erection of 6,600-volt three-phase, switchgear at Stuart-street Station. Specifications, etc., of Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester

### ROAD, SANITARY, AND WATER WORKS.

MARCH 17.—**Hartismere.**—ROAD MAKING.—The Guardians invite tenders for making the roads at their new infirmary building. Plans, etc., at the office of the Clerk of Works, at the Infirmary.

MARCH 20.—**Chyverton.**—SANITARY ACCOMMODATION.—Tenders are invited, on behalf of Captain Thomas-Peter, for providing new sanitary accommodation, water supply, and other work at Chyverton, in Perranzabuloe. Plans, etc., of Mr. Alfred J. Cornelius, M.S.A., architect and surveyor, Truro.

MARCH 20.—**Earsdon.**—MATERIAL.—Supply to the U.D.C. of road material from April 1, 1916, to March 31, 1917. Specifications, etc., of the Surveyor, Mr. J. R. MacMillen, Council Offices, Shiremoor.

MARCH 20.—**Manchester.**—STREET RECONSTRUCTION.—Reconstruction of Cambrian-street (late Gibbon-street) Bridge over the Ashton Canal for the Improvement and Buildings Committee. Plans, etc., of the City Surveyor's Office, Town Hall, Manchester. Deposit, £2 2s.

MARCH 20. — **Reddish.** — REPAVING, ETC.—Repaving a portion and the repair of a portion of Mill-lane, Reddish, near Stockport, for the Calico Printers' Association, Ltd., St. James's-buildings, Oxford-street, Manchester. Specification, etc., of the Engineering Department. Deposit, £1 1s.

MARCH 20.—**Skipton.**—MATERIALS.—Supply to the U.D.C. of road materials during the year ending March 31, 1917. Forms of tender from Mr. Aldridge, Town Hall, Skipton.

MARCH 21.—**Barton-upon-Irwell.**—MATERIAL.—Supply to the R.D.C. during the year ending March 31, 1917, of road material. Form of tender of Mr. A. H. Mountain, Surveyor, Council Offices, Patricroft.

MARCH 21.—**Foleshill.**—GRANITE.—Supply to the R.D.C. of granite for the year ending March 31, 1917. Forms of tender of the Surveyor, Council Offices, Foleshill.

MARCH 21.—**Hazel Grove.**—MATERIAL.—Supply to the Hazel Grove and Bramhall U.D.C. of road materials. Forms of tender, etc., of Mr. G. Severn Doncaster, Surveyor, Council Office, Hazel Grove.

MARCH 21.—**London.**—WOOD PAVING BLOCKS.—Supply to the L.C.C. of wood paving blocks for use in the Tramways Department for a period of twelve calendar months from April 1, 1916. Form of tender, etc., from the Chief Officer, L.C.C. Tramways, 62, Finsbury-pavement, E.C.

MARCH 21.—**Stroud.**—GRANITE, ETC.—Supply to the U.D.C. of granite, basalt, limestone, and tarred macadam for twelve months. Form of tender from Mr. E. Northam Witchell, Clerk to the U.D.C., 1, Lansdown, Stroud, Glos.

MARCH 21.—**Sutton Bridge.**—GRANITE, ETC.—Supply to the U.D.C. of granite, slag, sand, etc. Mr. Leopold C. Harvey, Clerk to the Council, Market-place, Spalding.

MARCH 22.—**Hull.**—MACADAM.—Supply to the Corporation of macadam for twelve months. Forms of tender, etc., of Mr. F. W. Bricknell, City Engineer, Guildhall, Hull.

MARCH 22.—**Strood.**—MATERIAL.—Supply to the R.D.C. of highway material. Specifications, etc., of the Surveyor, Mr. L. Randerson, of Meopham, near Gravesend.

MARCH 23.—**Clayton-le-Moors.**—MATERIALS.—Supply to the U.D.C. of road materials from April 1, 1916, to March 31, 1917. Forms of tender of Mr. A. Dodgeon, Assoc.M.Inst.C.E., Surveyor to the Council, Council Offices, Clayton-le-Moors.

MARCH 23. — **Longbenton.** — WHINSTONE. — Supply to the U.D.C. of hand-broken whinstone for the repair of the roads during the year ending March 31, 1917. Specifications, etc., from Mr. William Bean, Highway Surveyor, Council Offices, Forest Hall.

MARCH 23.—**Newburn.**—MATERIALS.—Supply to the U.D.C. of highway materials during the year ending March 31, 1917. Particulars of the Surveyor, Mr. Thomas Gregory, Council Offices, Newburn-on-Tyne.

MARCH 23. — **Wigston Magna.** — GRANITE. — Supply to the U.D.C. of broken granite for the year ending March 31, 1917. Particulars from the Surveyor to the Council, Mr. W. G. J. Clark, Station-road, Wigston Magna.

NO DATE.—**Wycombe.**—FLINTS.—Supply to the R.D.C. of flints for the repair of the district roads. Forms of tender, etc., of Mr. Arthur L. Grant, 15, High-street, High Wycombe.

## Auction Sales.

* MARCH 21.—**Lower Clapton.**—Mr. H. W. Smith will sell by auction, on the premises, the machinery and stock of a joinery, packing, and showcase manufacturer.

* MARCH 23.—**Balham.**—Messrs. J. G. Dean & Co. will sell by auction, on the premises, building materials and builders' plant.

[Those with an asterisk (*) are advertised in this issue.]

# PRICES CURRENT OF MATERIALS.

**[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]**

*Since our last issue timber, metals, and oils and white lead have been increased.*—ED.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

## BRICKS, &c.

| Per 1000 Alongside, in River Thames. | £ s. d. |
|---|---|
| Best Stocks | 2 0 0 |
| Picked Stocks for Facings | 2 12 0 |

Per 1000, Delivered at Railway Depôt, London.

| | £ s. d. | | £ s. d. |
|---|---|---|---|
| Flettons | 1 10 0 | Best Blue Pressed Staffordshire | 4 14 0 |
| Best Fareham Red | 3 12 0 | Do. Bullnose | 4 18 6 |
| Best Red Pressed Ruabon Facing | 5 5 0 | Best Stourbridge Fire Bricks | 4 14 0 |
| GLAZED BRICKS— | | | |
| Best White, Ivory, and Salt Glazed Stretchers | 12 7 6 | D'ble Str'tch'rs | 17 17 6 |
| | | Double Headers | 14 17 6 |
| | | One Side and two Ends | 18 17 6 |
| Headers | 11 17 6 | Two Sides and one End | 19 17 6 |
| Quoins, Bullnose and 4½ in. Flats | 15 17 6 | Splays and Squints | 17 7 6 |

Second Quality £1 per 1000 less than best.

| | s. d. | |
|---|---|---|
| Thames Ballast | 7 9 | per yard, delivered. |
| Thames and Pit Sand | 8 0 | " " " |
| Best Washed Sand | 9 0 | " " " |

Per ton, delivered.

| | £ s. d. | £ s. d. |
|---|---|---|
| Best Portland Cement | 2 5 0 .. | 2 8 0 |

Do. £2 1s. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime.... 1 5 6 at rly. depôt.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.
Grey Stone Lime ..... 18s. 0d. per yard delivered.
Stourbridge Fireclay in s'cks 30s. 0d. per ton at rly. dpt.

## STONE.

| | s. d. |
|---|---|
| BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube | 1 7 |
| Do. do. delivered in Railway trucks at Nine Elms, L. & S.W.R., per ft. cube | 1 8½ |
| Do. do. delivered on road waggons, Nine Elms Depôt | 1 9½ |
| PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Westbourne Park, G.W.R., South Lambeth, G.W.R., or Nine Elms, or L. & S.W., per ft. cube | 2 5½ |
| Do. do. delivered on road waggons at Pimlico Wharf or Nine Elms Depôt, per ft. cube | 2 6½ |

White Basebed, 2d. per ft. cube extra.

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Depôt.

| | s. d. | | s. d. |
|---|---|---|---|
| Ancaster in blocks | 2 0 | Closeburn Red Freestone | 2 2 |
| Beer in blocks | 1 7½ | | |
| Grinshill in blocks | 2 4 | Red and White Mansfield Random block | 2 9 |
| Darley Dale in blocks | 2 5 | Yellow Magnesian Limestone do. do. | 3 |

YORK STONE—*Robin Hood Quality.*

| Per Ft. Cube, Delivered at Railway Depôt. | s. d. |
|---|---|
| Scappled random blocks | 3 4 |

Per Ft. Super., Delivered at Railway Depôt.

| | |
|---|---|
| 6 in. sawn two sides landings to sizes (under 40 ft. super.) | 2 5 |
| 6 in. rubbed two sides ditto, ditto | 2 8 |
| 3 in. sawn two sides slabs (random sizes) | 1 0½ |
| 2 in. to 2½ in. sawn one side slabs (random sizes) | 0 8½ |
| 1½ in. to 2 in. ditto, ditto | 0 6¾ |

HARD YORK—

| Per Ft. Cube, Delivered at Railway Depôt. | |
|---|---|
| Scappled random blocks | 3 0 |

Per Ft. Super., Delivered at Railway Depôt.

| | |
|---|---|
| 6 in. sawn two sides landing to sizes (under 40 ft. super.) | 2 3 |
| 6 in. rubbed two sides ditto | 2 7 |
| 3 in. sawn two sides slabs (random sizes) | 1 0 |
| 2 in. self-faced random flags | 0 5 |

## TILES.

Per 1000 f.o.r. London.

| | £ s. d. |
|---|---|
| Best machine-made tiles or hand-made sand-faced tiles from either Broseley or Staffordshire district | 2 12 6 |
| Ornamental ditto | 2 15 0 |
| Hip and valley tiles (per dozen) | 0 5 6 |

## SLATES.

Per 1000 of 1200 f.o.r. London.

| | £ s. d. |
|---|---|
| Best Blue Bangor slates, 20 by 10 | 11 16 0 |
| First quality " " | 11 10 0 |
| " " 16 by 8 | 5 15 0 |
| Best Blue Portmadoc, 20 by 10 | 11 13 6 |
| First quality " " | 11 3 6 |
| " " 16 by 8 | 5 15 0 |

## WOOD.

Timber prices should be confirmed, as the market is *changing daily.*

BEST BUILDING REDWOOD.

| Imported sizes. | Per standard. £ s. d. | £ s. d. |
|---|---|---|
| Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in. | 33 0 0 .. | 34 0 0 |
| 3 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in. | 32 0 0 .. | 33 0 0 |

## WOOD (*Continued*).

BEST BUILDING REDWOOD.

| | Per standard. £ s. d. | £ s. d. |
|---|---|---|
| Battens: 2 in., 2½ in., and 3 in. by 8 in.; 2 in., 2½ in., and 3 in. by 7 in.; 2 in., 2½ in., and 3 in. by 6 in.; 2 in., 2½ in., and 3 in. by 5 in. | 31 0 0 .. | 32 0 0 |
| Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in., 3 in. by 4 in., and 3 in. by 4½ in. | | |
| Boards: 1 in., 1¼ in., and 1½ in. by 6 in. and 7 in. | 0 10 0 | more than |
| ¾ in. | 1 0 0 | battens. |
| Seconds: building quality deals, battens, boards, and scantlings | 1 0 0 | less than best. |
| Best Middling Dantzic and Memel Fir Timber Logs (average specification) | Per load of 50 ft. cube. 10 0 0 .. | — |
| Seconds do. do. | 9 10 0 .. | — |
| 9 in. to 10 in. do. | 8 10 0 .. | — |
| 6 in. to 8 in. do. | 8 0 0 .. | — |
| Stocks very limited. | | |
| Sawn pitch pine logs (about 35 cu. ft. average) | Per load. 10 0 0 .. | 11 0 0 |
| Do. 6 in. to 10 in. | 9 0 0 .. | 10 0 0 |
| Sawn Swedish Balks 4 in. by 4 in. to 6 in. by 7 in. | 6 10 0 .. | 7 0 0 |
| | Per standard. | |
| Best Pitch Pine Deals | 34 0 0 .. | 35 0 0 |
| Under 2 in. thick | 0 10 0 | extra. |

JOINERS' WOOD.

| | | |
|---|---|---|
| White Sea First Quality Red: 4 in. by 11 in. | 39 0 0 .. | 40 0 0 |
| 3 in. by 11 in., and 2 in. by 11 in. | 38 0 0 .. | 39 0 0 |
| 4 in. by 9 in. | 37 0 0 .. | 38 0 0 |
| 3 in. by 9 in., and 2½ in. by 9 in. | 36 0 0 .. | 37 0 0 |
| 9 in. by 11 in. boards | 1 0 0 | more than deals. |
| 7 in. and 8 in. battens | 33 0 0 .. | 34 0 0 |
| 7 in. and 8 in. boards | 1 0 0 | more than battens. |
| Seconds quality | 2 0 0 | less than best. |
| Third quality | £2 to £3 | less than seconds. |
| Archangel White Deals— Best 3 in. by 9 in. and 10 in. and 11 in. | 36 0 0 .. | 37 0 0 |
| Seconds, do. | 2 0 0 | less than best. |
| U.S. Battens | 30 0 0 .. | 32 0 0 |

Prepared Floorings and Matchings, Seconds Swedish Red and equal—

| | Per square actual. £ s. d. | £ s. d. |
|---|---|---|
| 1½ in. by 6½ in. planed and shot | 1 16 0 .. | 1 19 0 |
| 1½ in. by 6½ in. planed and matched | 1 16 6 .. | 1 19 6 |
| 1 in. by 6½ in. planed and shot | 1 9 0 .. | 1 12 0 |
| 1 in. by 6½ in. planed and matched | 1 9 6 .. | 1 12 6 |
| ⅞ in. by 6½ in. planed, matched and beaded, or V jointed | 1 4 0 .. | 1 6 0 |
| 1 in. by 6½ in. do. | 1 10 6 .. | 1 12 0 |
| ⅞ in. by 6½ in. do. | 1 0 0 .. | 1 1 0 |

| | Per standard. £ s. d. | £ s. d. |
|---|---|---|
| Columbian or Oregon Pine, best quality | 42 0 0 .. | 44 0 0 |
| Yellow Pine—First, regular sizes | 57 0 0 | upwards. |
| Oddments | 39 0 0 | " |
| Seconds, regular sizes | 43 10 0 | " |
| Oddments | 37 10 0 | " |
| Kauri Pine—Planks per ft. cube | 0 8 0 | — |
| Wainscot Oak Logs, per ft. cube | 0 10 6 .. | 0 12 6 |
| Dry Wainscot Oak, per ft. super, as inch | 0 1 0 .. | 0 1 3 |
| ¾ in. do. do. | 0 0 10 .. | 0 1 0 |
| Dry Mahogany — Honduras, Tabasco, per ft. super, as inch | 0 1 0 .. | 0 1 4 |
| Selected, Figury, per ft. super. as inch | 0 1 6 .. | 0 2 6 |
| Cuba Mahogany | 0 1 6 .. | 0 2 6 |
| Dry Walnut, American, per super, as inch | 0 1 0 .. | upwards. 0 1 3 |
| French, "Italian," Walnut | 0 1 0 .. | 0 1 6 |
| Teak, per load (Rangoon or Moulmein) | 28 0 0 .. | 34 0 0 |
| Do. do. (Java) | 25 0 0 .. | 27 0 0 |
| American Whitewood planks, per ft. cube | 0 6 6 .. | 0 7 6 |

## METALS.

JOISTS, GIRDERS, &c.

| | In London or delivered Railway Vans, per ton. £ s. d. | £ s. d. |
|---|---|---|
| Rolled Steel Joists, ordinary sections, basis price | 20 0 0 .. | 21 0 0 |
| Plain Compound Girders, ordinary Sections | 22 0 0 .. | 23 0 0 |
| Plain Compound Stanchions | 23 0 0 .. | 24 10 0 |
| Angles, Tees, and Channels, ordinary sections | 20 10 0 .. | 21 10 0 |
| Flitch Plates | 20 10 0 .. | 21 10 0 |
| Cast Iron Columns and Stanchions, plain ordinary patterns | 13 10 0 .. | 14 0 0 |

(Turning extra.)

## METALS (*Continued*).

Per ton, in London.

| IRON— | £ s. d. | £ s. d. |
|---|---|---|
| Common Bars | 16 0 0 .. | — |
| Staffordshire Crown Bars, good merchant quality | 16 0 0 .. | 17 0 0 |
| Staffordshire "Marked Bars" | 17 10 0 .. | 18 0 0 |
| Mild Steel Bars | 18 0 0 .. | 18 10 0 |
| Steel Bars, Ferro-Concrete quality, £18 basis price. | | |
| Hoop Iron, basis price | 19 10 0 .. | 20 0 0 |
| " " Galvanised | 30 0 0 .. | 35 0 0 |
| (* And upwards, according to size and gauge.) | | |
| Sheet Iron Black— Ordinary sizes to 20 g. | 19 10 0 .. | 20 0 0 |
| " " 24 g. | 20 10 0 .. | 21 0 0 |
| " " 26 g. | 21 10 0 .. | 22 0 0 |
| Sheet Iron, Galvanised flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g. | 30 0 0 .. | — |
| Ordinary sizes to 22 g. and 24 g. | 30 10 0 .. | — |
| Ordinary sizes to 26 g. | 33 0 0 .. | — |
| Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g. | 31 0 0 .. | — |
| " " 22 g. and 24 g. | 31 10 0 .. | — |
| Ordinary sizes to 26 g. | 34 10 0 .. | — |
| Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 8 ft. 20 g. | 29 0 0 .. | — |
| Ordinary sizes, 22 g. & 24 g. | 29 10 0 .. | — |
| Ordinary sizes, 26 g. | 30 0 0 .. | — |
| Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker | 20 10 0 .. | — |
| Best Soft Steel Sheets, 22 g. & 24 g. | 20 15 0 .. | — |
| Best Soft Steel Sheets, 26 g. | 22 10 0 .. | — |
| Cut Nails, 3 in. to 6 in. | 21 0 0 .. | 21 10 0 |

(Under 3 in., usual trade extras.)
Galvanised prices are nominal under the present exceptional conditions.

## LEAD, &c.

Delivered in London.

| LEAD—Sheet, English, 4 lb. and up | £ s. d. 39 0 0 .. | — |
|---|---|---|
| Pipe in coils | 39 10 0 .. | — |
| Soil pipe | 42 10 0 .. | — |
| Compo pipe | 42 10 0 .. | — |

NOTE—Country delivery 20s. per ton extra; lots under 5 cwt. 1s. per cwt. extra.

| COPPER— | | | |
|---|---|---|---|
| Strong Sheet | per lb. | 0 1 5 .. | — |
| Thin " | " | 0 1 6 .. | — |
| Copper nails | " | 0 1 5 .. | — |
| Copper wire | " | 0 1 5 .. | — |
| BRASS— Strong Sheet | " | 0 1 3 .. | — |
| Thin | " | 0 1 4 .. | — |
| TIN—English Ingots | " | 0 1 11 .. | — |
| SOLDER—Plumbers' | " | 0 0 10 .. | — |
| Tinmen's | " | 0 1 0 .. | — |
| Blowpipe | " | 0 1 2 .. | — |

## GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES

| Per Ft. | | Per Ft. |
|---|---|---|
| 15 oz. thirds 5½d. | 32 oz. thirds | 8½d. |
| 21 oz. thirds 6½d. | " fourths | 7½d. |
| 26 oz. thirds 7d. | Fluted Sheet, 15 oz. | 5½d. |
| " fourths 6½d. | " 21 oz. | 6½d. |

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

| | Per Ft. |
|---|---|
| ⅛ Rolled plate | 4d. |
| ¼ Rough rolled and rough cast plate | 4½d. |
| ⅜ Rough rolled and rough cast plate | 4½d. |
| Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white | 5d. |
| Ditto, tinted | 6½d. |
| Rolled Sheet | 4½d. |

## OILS, &c.

| | | £ s. d. |
|---|---|---|
| Raw Linseed Oil in pipes | per gallon | 0 3 11 |
| " " " in barrels | " | 0 4 0 |
| " " " in drums | " | 0 4 3 |
| Boiled " " in barrels | " | 0 4 2 |
| " " " in drums | " | 0 4 6 |
| Turpentine in barrels | " | 0 4 1 |
| " in drums | " | 0 4 4 |
| Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.) | | 51 5 0 |
| Red Lead, Dry | per ton | 56 0 0 |
| Best Linseed Oil Putty | per cwt. | 0 11 0 |
| Stockholm Tar | per barrel | 1 12 0 |

GENUINE WHITE LEAD PAINT—"Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots.....per ton delivered 62 15 0

## VARNISHES, &c.

| | Per gallon. £ s. d. |
|---|---|
| Fine Pale Oak Varnish | 0 8 0 |
| Pale Copal Oak | 0 10 6 |
| Superfine Pale Elastic Oak | 0 12 6 |
| Fine Extra Hard Church Oak | 0 10 0 |
| Superfine Hard-drying Oak, for seats of Churches | 0 14 6 |
| Fine Elastic Carriage | 0 12 9 |
| Superfine Pale Elastic Carriage | 0 16 0 |
| Fine Pale Maple | 0 10 0 |
| Finest Pale Durable Copal | 0 18 6 |
| Extra Pale French Oil | 1 1 0 |
| Eggshell Flating Varnish | 0 18 0 |
| White Pale Enamel | 1 4 0 |
| Extra Pale Paper | 0 12 0 |
| Best Japan Gold Size | 0 10 0 |
| Best Black Japan | 0 16 0 |
| Oak and Mahogany Stain | 0 9 0 |
| Brunswick Black | 0 8 0 |
| Berlin Black | 0 16 0 |
| Knotting | 0 10 0 |
| French and Brush Polish | 0 10 6 |

## PATENTS.

APPLICATIONS PUBLISHED.*

1,771 of 1915.—John Ernest Mortimer: Swivels and shackles.

1,826 of 1915.—Arthur Herbert Curtis: Heating apparatus.

2,026 of 1915.—Louis Daumas: Seatguards or water-closets.

2,237 of 1915.—Foster Ritchie: Pantagraph apparatus.

2,257 of 1915.—Samuel Ingham: Military huts, bungalows, and other buildings and structures.

4,257 of 1915.—Frederick Charles Woodford: Composite roofings.

4,289 of 1915.—Peter Ford & Sons, Ltd., and Harry Ford: Composition and process for making the same for moulding or forming articles such as light-reflectors or shades, vases, or the like, or decorative slabs for partitions, wall or ceiling covering, or the like.

4,869 of 1915.—George Edward Clare: Combination range for cottages and the like, applicable also for warming and ventilating the rooms thereof.

5,399 of 1915.—Arthur Ernest Charles Hammond: Devices for preventing noise in water supply pipes.

6,642 of 1915.—Robert Moore: Combined electric switches and connecting plugs.

6,910 of 1915.—James Damrel Prior: Domestic fireplaces.

7,204 of 1915.—Herbert Hepworth Thompson: Reinforced concrete construction.

7,247 of 1915.—John Donnelly and John McGinley: Hinges.

9,369 of 1915.—Kenneth Aird: Burners for gas fires.

## TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 2 *p.m. on Wednesday.* [N.B.—We cannot publish Tenders unless the amount of the Tender is stated.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BARNSLEY.—For cleansing and painting the long block at Kendray Hospital, for the Barnsley Town Council. Mr. J. H. Taylor, M.Inst.C.E., Surveyor, Manor House Offices, Barnsley:—
J. Snowden & Son, Market-street, Barnsley* ..... £149 15

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

CASTLEBLAYNEY.—For erection of a brick chimney shaft at Fane Valley Creamery, Altnamackin, Castleblayney, for the Fane Valley Co-operative Association and Dairy Society, Ltd.
Reading Boiler Setting Co., Landchambers, Reading ..... £152

HOVE.—For alterations and additions to the electricity works, Davigdor-road, for the Town Council. Mr. H. H. Scott, Borough Surveyor:—
J. Parsons & Sons, 176, Church-road, Hove* ..... £345

LONDON.—For painting at the Camden Town fire-station, for the London County Council:—

| | |
|---|---|
| McCormick & Sons, Ltd. | £363 0 |
| A. Monk | 277 0 |
| J. Marsland & Sons | 266 0 |
| F. & T. Thorne | 260 0 |
| Vigor & Co. | 252 3 |
| L. H. & R. Roberts | 248 14 |
| J. C. Mather* | 170 0 |

NEATH.—For repairs, etc., to Drymma Mansion, for the Glamorganshire Joint Poor Law Establishment Committee:—
Arnold Bros., Clydach-on-Tawe* .... £2,500

OAKDALE (Mon.).—For erection of a workmen's institute at Oakdale Village, for the Oakdale Institute Committee. Mr. A. F. Webb, M.S.A., architect and surveyor, Blackwood, Mon.:—

| | |
|---|---|
| T. C. Glugas | £5,683 |
| Lloyd & Hopkins | 5,534 |
| L. & R. Lewis | 5,472 |
| R. Moon | 5,150 |
| R. Jones | 4,997 |
| E. H. James | 4,749 |
| E. Walters & Sons, Bristol* | 4,749 |
| Building and Public Works Construction Co., Ltd. | 4,399 |

SWANSEA.—For electric lighting at the Brynmill and Cwmbwrla Schools, for the Swansea School Buildings Committee:—
W. Law, Chancery-chambers, Rutland-street, Swansea* ..... £560

## TO CORRESPONDENTS.

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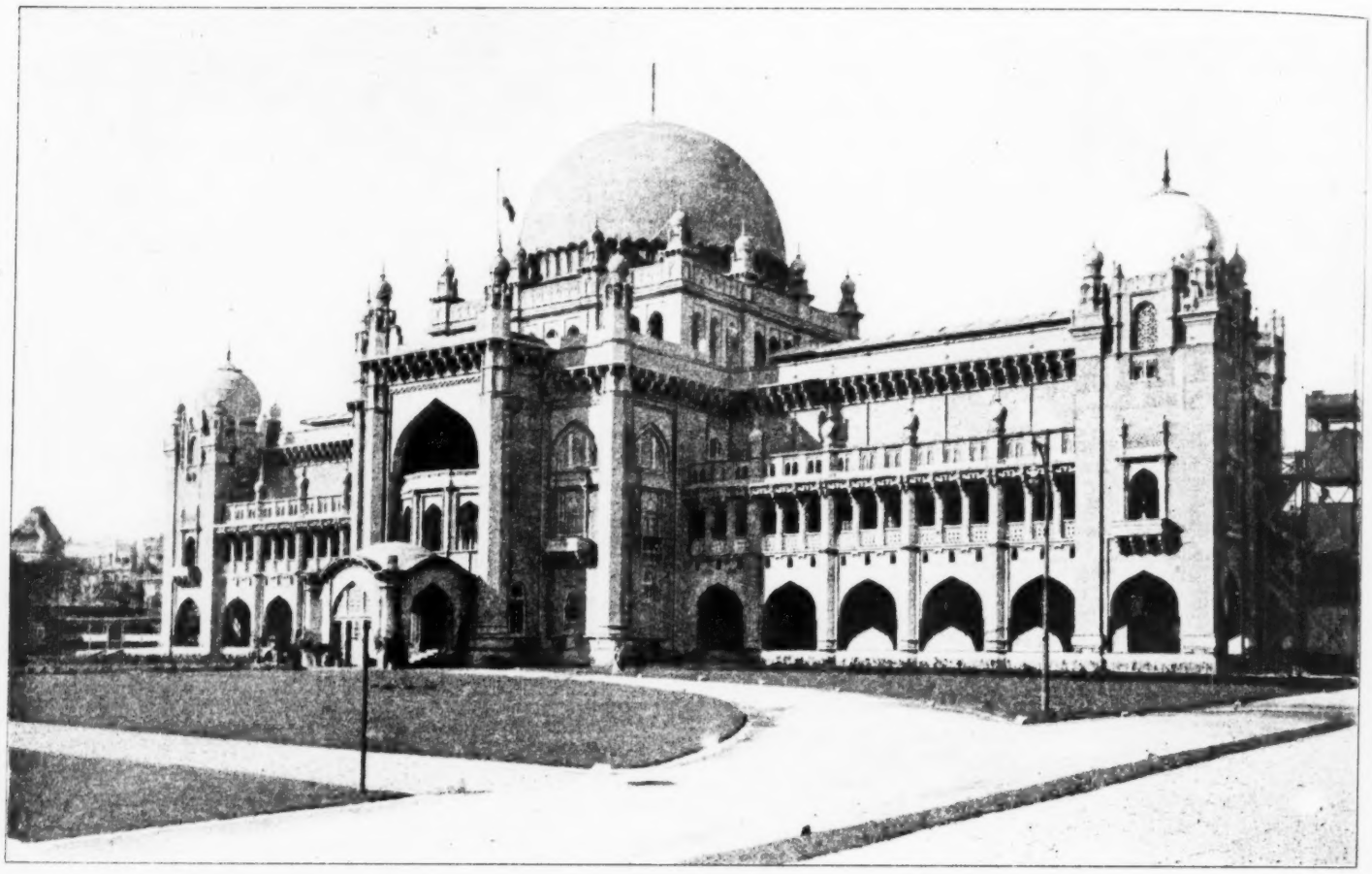

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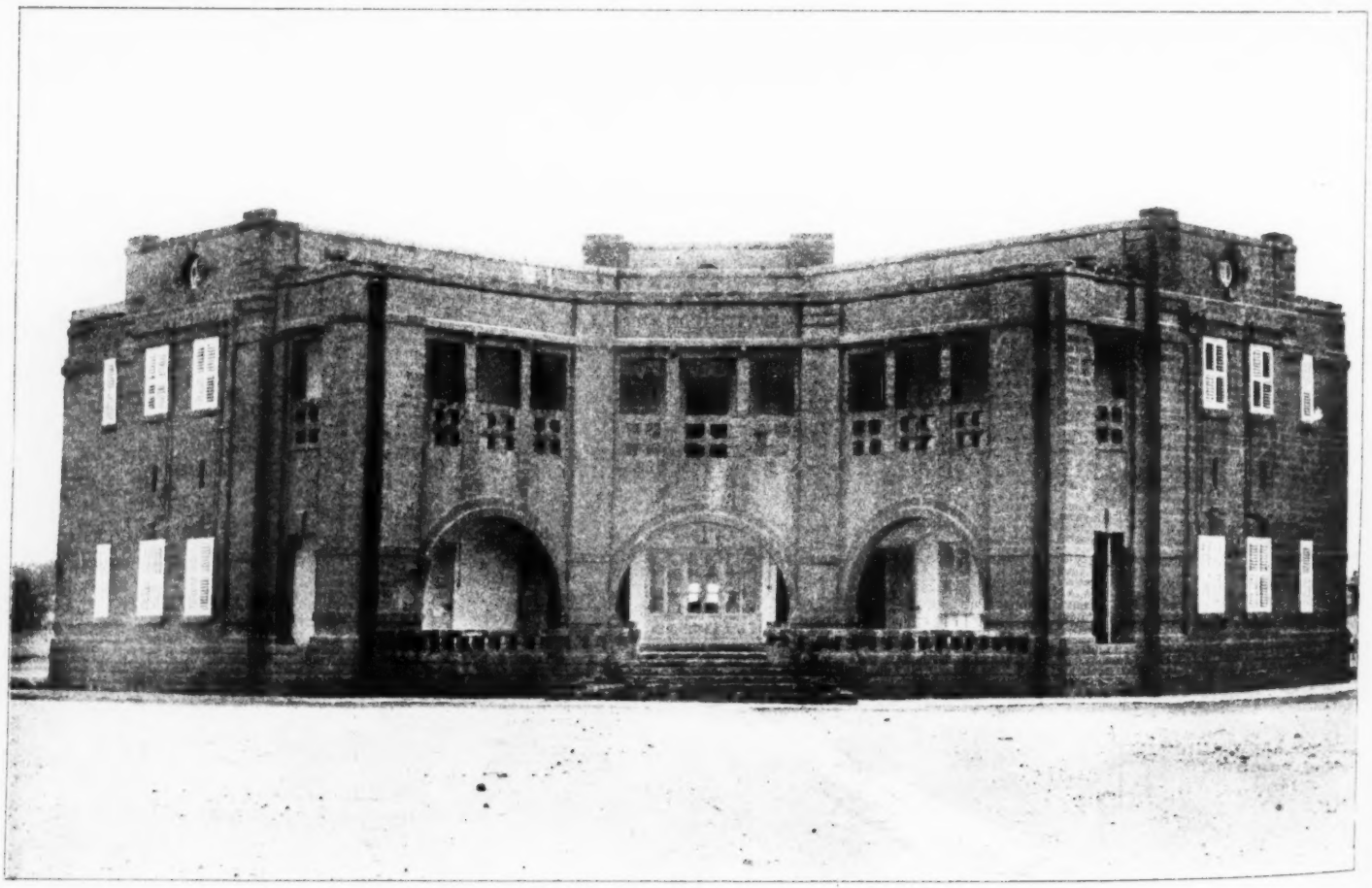

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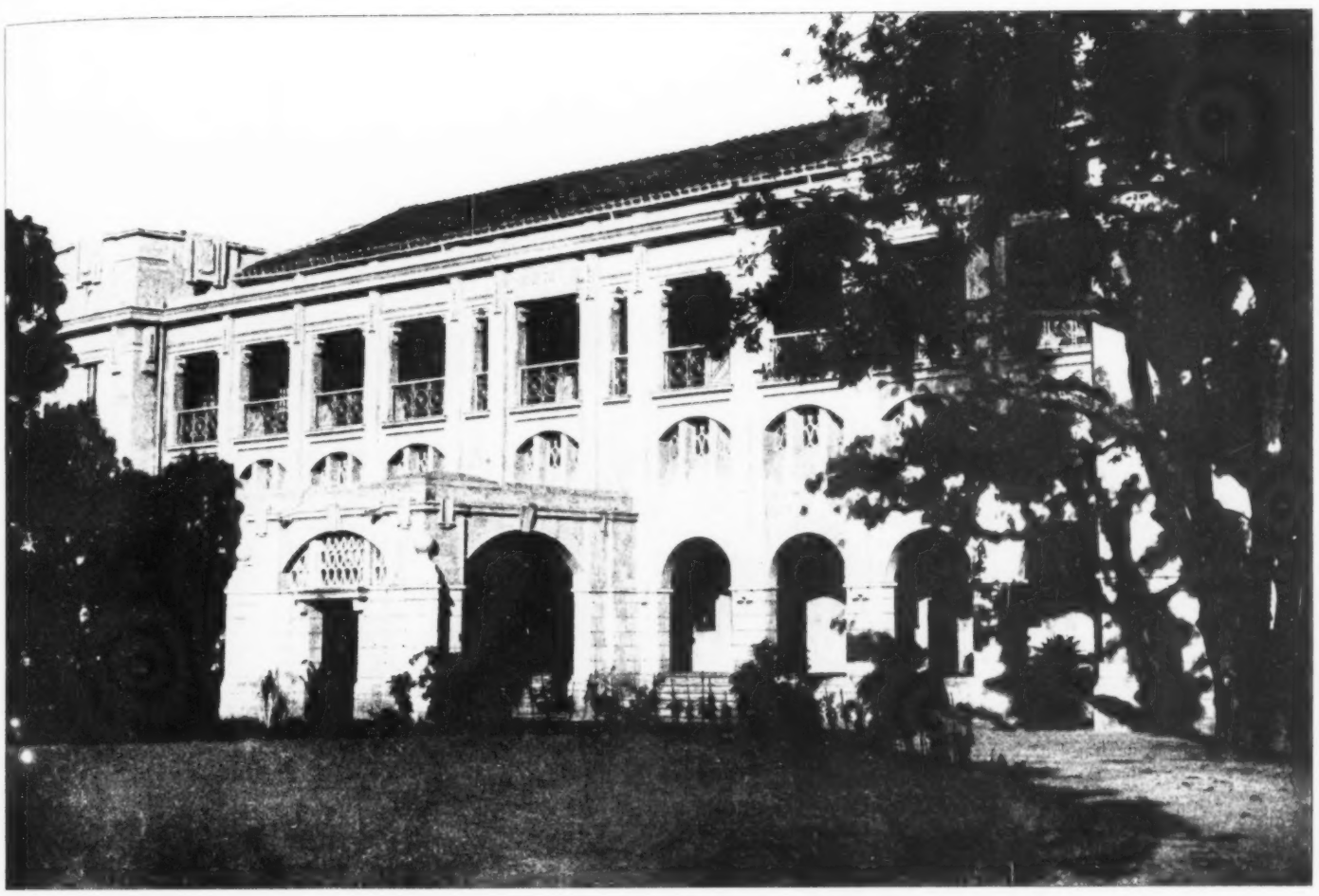

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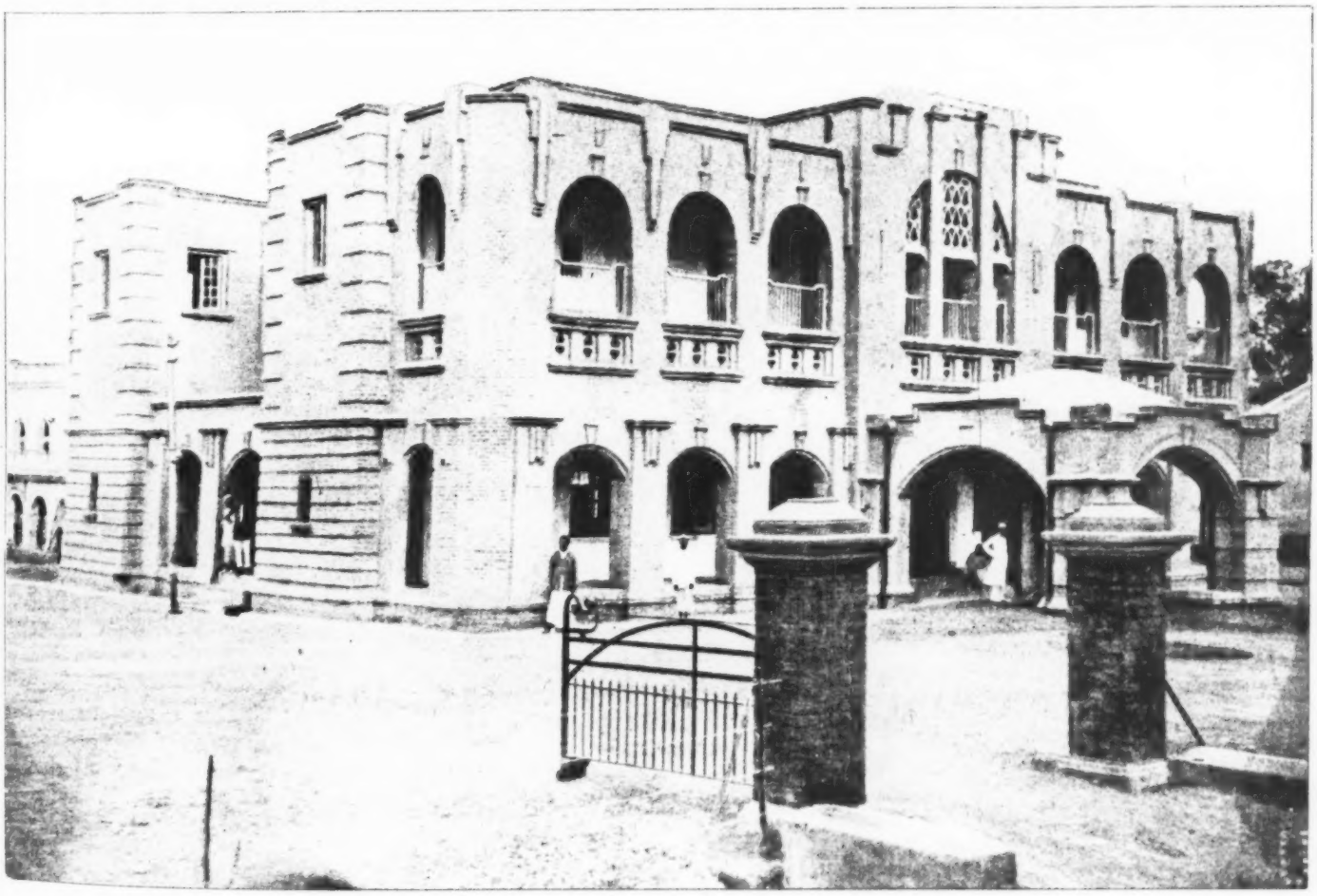

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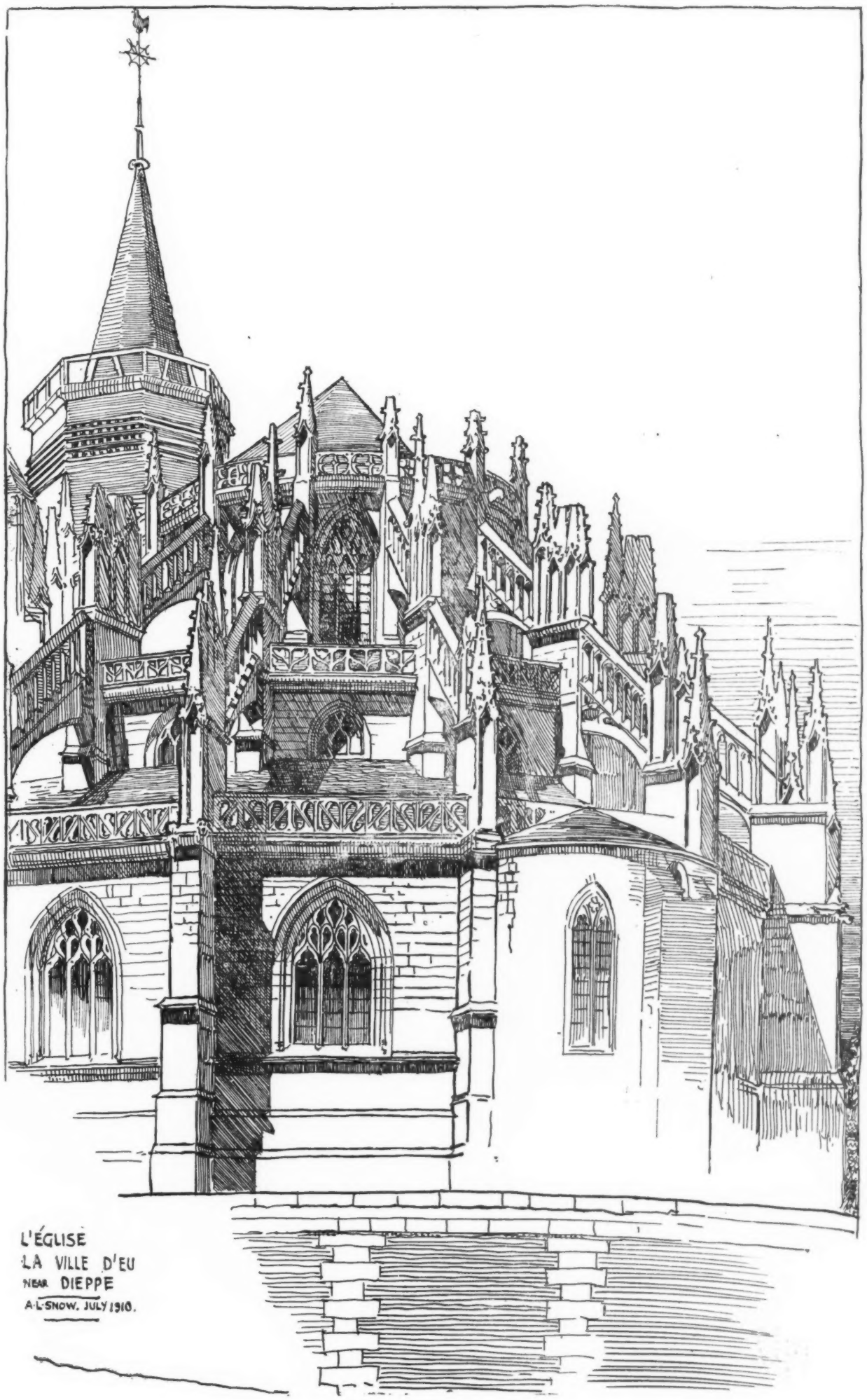


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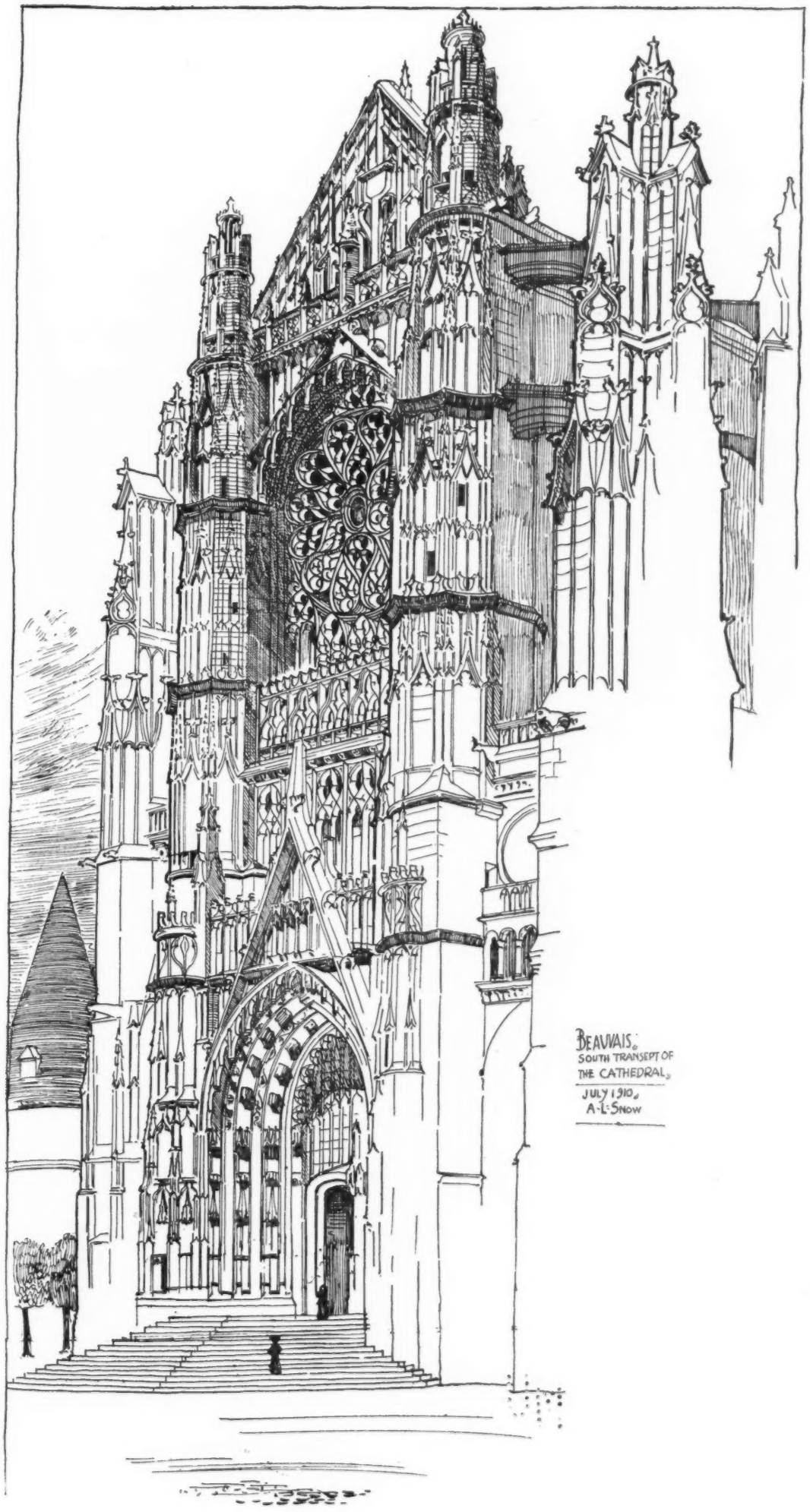


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ST. MARY'S, ABCHURCH.

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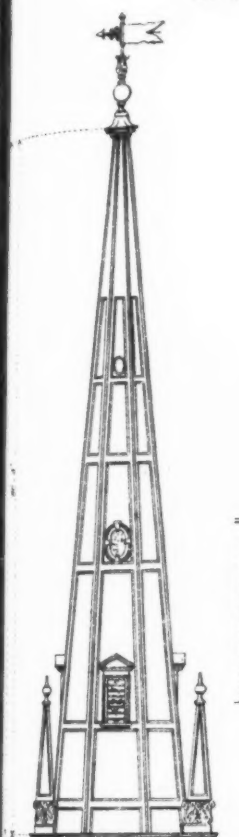

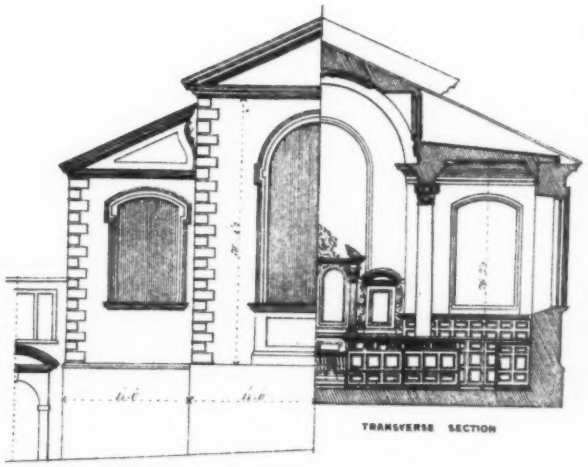


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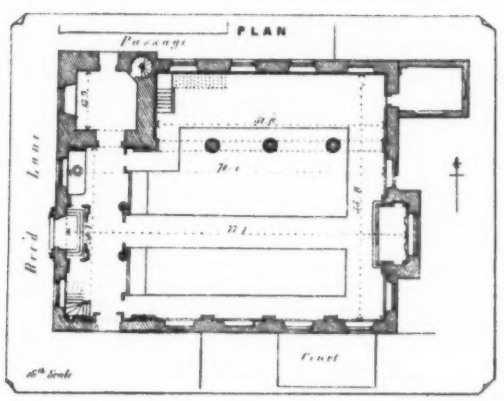


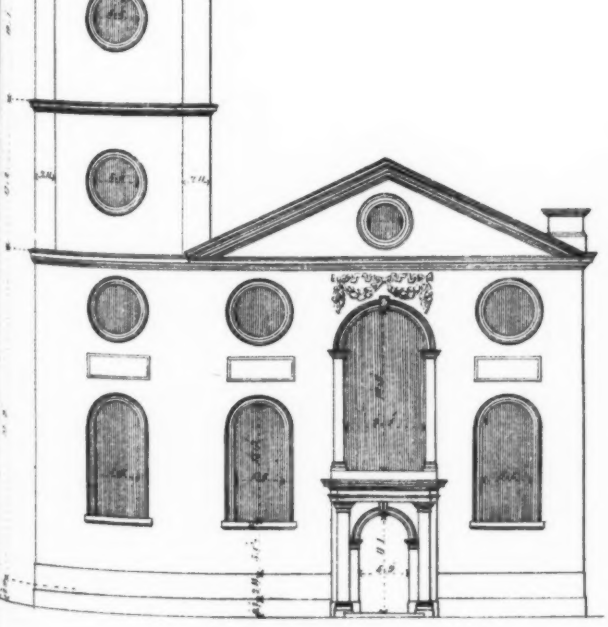

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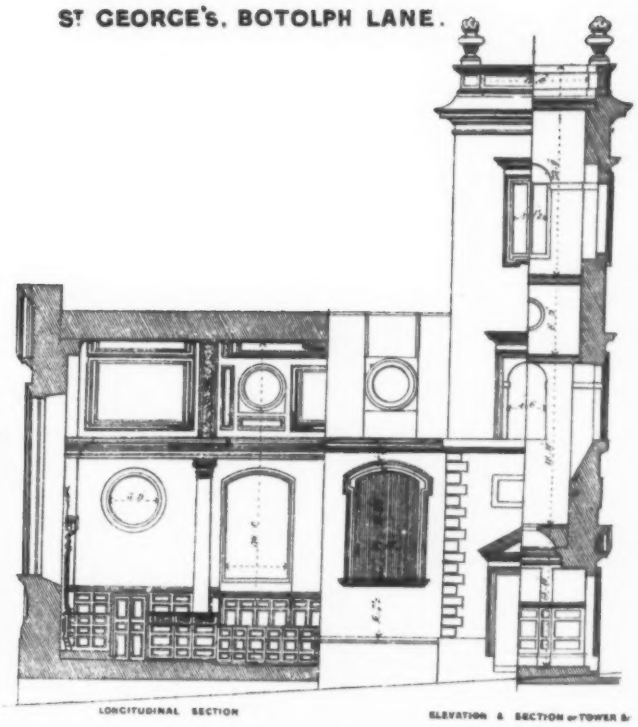

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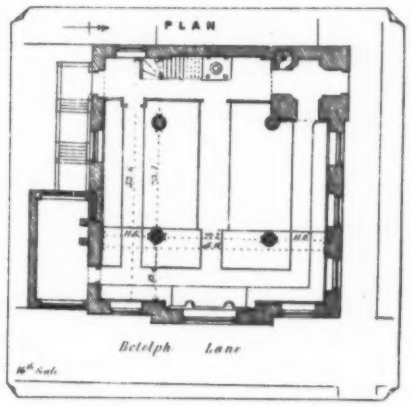


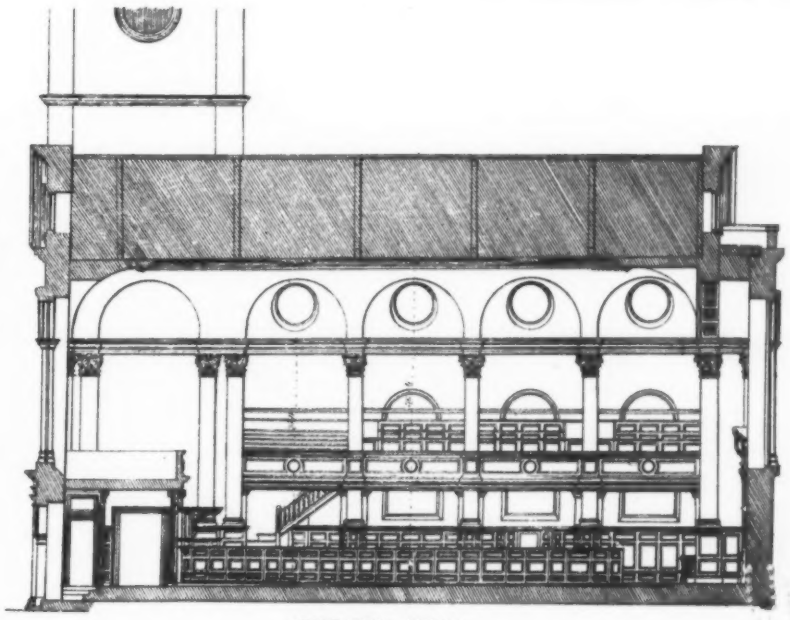

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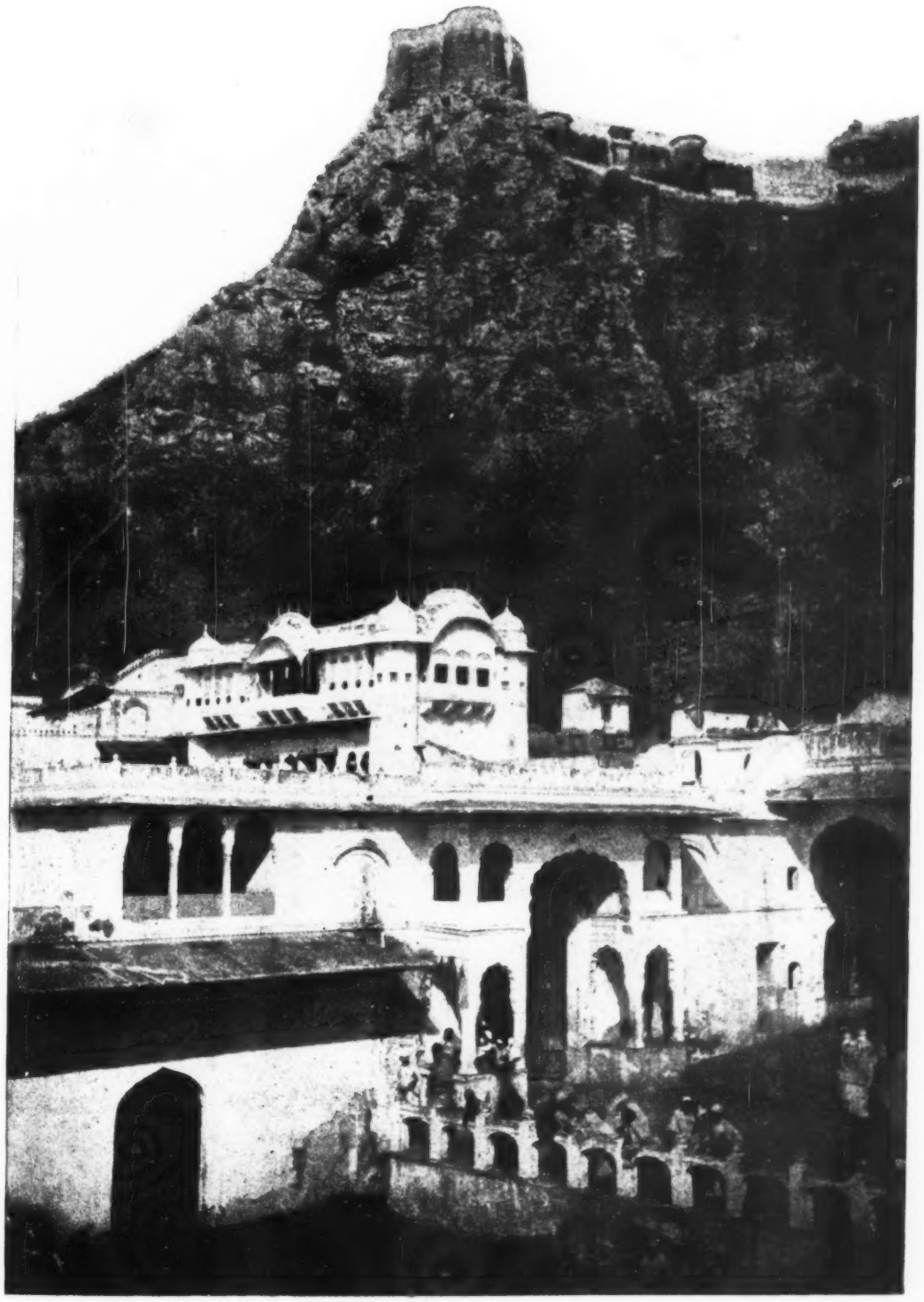

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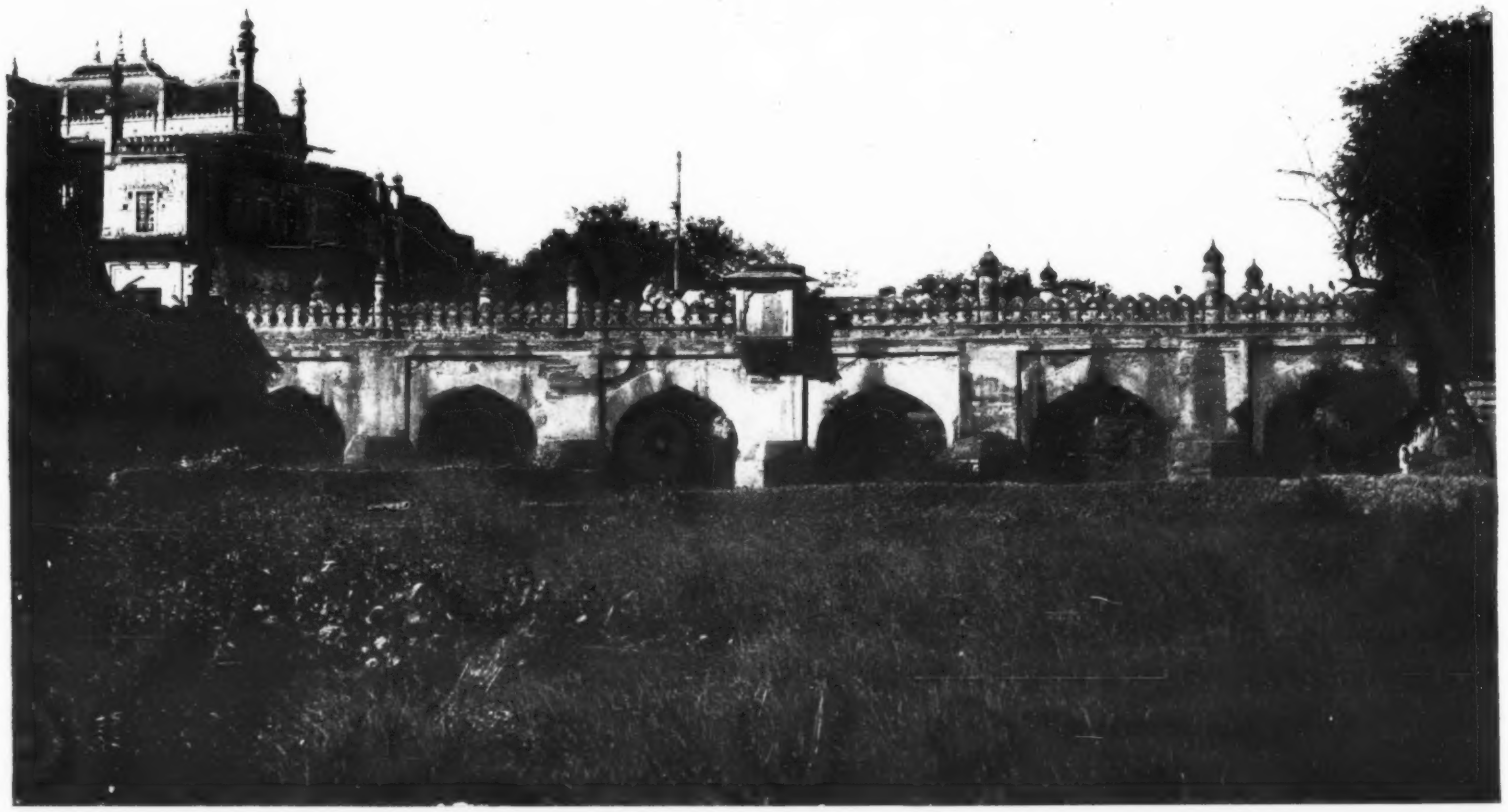

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